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PRC

PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

ST. LOUIS AUTO SHREDDING, INC.
NATIONAL CITY, ILLINOIS
ILD 984 767 392

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

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EPA Region	:	5
Site No.	:	ILD 984 767 392
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CONTENTS

FIGURES

TABLES

EXECUTIVE SUMMARY

PRC Environmental Management, Inc. (PRC), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the St. Louis Auto Shredding, Inc. (SLAS), facility in National City, St. Clair County, Illinois. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified.

The SLAS facility has operated at its current location since it began operations in 1975. The SLAS facility shreds automobiles and appliances for metal recovery. Shredding operations generate recyclable iron and nonferrous metals and nonrecoverable auto fluff and media float. Auto fluff and media float are stored in on-site waste piles and disposed in the on-site landfill. The facility also dismantles railcars and other large metal items. This process generates shaker dirt that is stored in on-site waste piles and sold with recoverable metal scrap, when possible, or disposed in the on-site landfill. The facility generates waste oil from equipment maintenance, media plant operations, and the railcar shear. Waste fuel has been generated by disassembling buses and locomotives in the past. The facility maintains that it generates and manages only nonhazardous wastes. As described below, the Illinois Environmental Protection Agency (IEPA) and U.S. Environmental Protection Agency (EPA) have determined that SLAS auto fluff from the landfill is hazardous under RCRA for lead (EPA waste code D008).

According to the facility, the typical auto fluff composition is about 19.3 percent sponge and foam; 33.3 percent fabric and batting; 22.2 percent plastics, 6.1 percent metal greater than or equal to 12 mesh in size; and 19.1 percent glass, sand, dirt, and metal under 12 mesh in size. During the VSI, facility representatives stated that auto fluff waste is heterogenous and undetected capacitors or gas tanks present in scrap materials could result in the presence of PCBs, lead, or other metals in isolated waste samples. Oil present on car parts or appliances could also be present in the waste in small quantities. However, SLAS maintains that facility wastes are nonhazardous.

A 1991 EPA publication, *Project Summary: PCB, Lead, and Cadmium Levels in Shredder Waste Materials: A Pilot Study*, found that auto fluff samples from seven U.S. shredder facilities all

contained detectable concentrations of PCBs, lead, and cadmium (at varying levels). PCBs demonstrated a low potential for leaching from auto fluff. Lead and cadmium showed some potential for leaching using the EPA Extraction Procedure (EP) toxicity limit. The study concluded that additional research was warranted to determine the potential hazards associated with auto fluff and to determine the economic viability of the shredder industry and potential impacts to that industry resulting from various approaches to waste management.

In 1988, IEPA collected samples of auto fluff from the on-site landfill. Based on analytical results, IEPA determined that the auto fluff exceeded EPA's EP toxicity limit for lead [5 parts per million (ppm)] and was a hazardous waste under RCRA. Therefore, IEPA determined that SLAS was a RCRA-regulated treatment, storage, and disposal (TSD) facility and cited SLAS for numerous RCRA violations. IEPA also stated that media float, shaker dirt, and waste oil should be analyzed for hazardous characteristics. SLAS disputed the analytical method IEPA used and maintains that it generates nonhazardous waste and is not a RCRA-regulated facility. This regulatory status issue was forwarded to the Illinois Attorney General in 1991 but a final determination was not made.

In the summer of 1993, an IEPA contractor conducted sampling of an auto fluff waste pile. Analysis indicated that none of the 15 samples met the definition of a hazardous waste under RCRA. However, nine samples had PCB concentrations above 50 ppm and IEPA determined this waste was subject to Toxic Substances Control Act (TSCA) regulation. SLAS questions the quality control for IEPA contractor sampling and disputes that the waste should be TSCA regulated. Split samples taken and analyzed by the SLAS contractor indicated lower PCB concentrations.

Based on the 1993 sampling results, IEPA determined that the facility is not currently generating a hazardous waste under RCRA and determined that outstanding alleged violations related to the auto fluff waste pile were not applicable. However, because the existing landfill waste has not been characterized, alleged RCRA violations related to the landfill remain outstanding. EPA currently considers SLAS a RCRA-regulated land disposal facility and a non-notifier. EPA completed a Notification of Hazardous Waste Activity Form for SLAS in 1988. The EPA RCRA identification number for the site is ILD 984 767 392.

The SLAS facility's landfill was issued IEPA Development Permit No. 1976-21-DE on May 21, 1976. Between 1976 and 1992 various supplemental permit applications were submitted and supplemental permits approved. Most recently, SLAS submitted two permit applications in February 1992 to (1) continue using an open portion of the landfill during closure; and (2) begin disposing of waste in a new portion of the landfill. Both applications were denied in January 1993. The facility ceased disposing of waste in the old portions of the landfill in September 1992 and is currently storing waste in piles. According to IEPA, these on-site waste piles have been present more than one year and are defined as land disposal units under revised IEPA regulations.

SLAS has a history of non-compliance for the landfill, including items such as: inadequately covering waste; improperly compacting and spreading waste; allowing scavenging and open burning to occur; managing waste in standing or flowing water; releasing waste to waters of the state (on-site wetlands); and disposing of waste outside permitted boundaries. Various enforcement actions have been initiated by IEPA in the past. SLAS has responded to the actions, but generally the same citations continued to be identified during IEPA inspections.

The PA/VSI identified the following eight SWMUs and one AOC at the facility:

Solid Waste Management Units

1. Shredder Cyclones
2. On-Site Landfill
3. Auto Fluff Waste Piles
4. Waste Oil Storage Area
5. Waste Oil Sump
6. Former Waste Fuel Storage Tanks
7. Media Float Waste Piles
8. Shaker Dirt Waste Piles

Areas of Concern

1. Stained Soil Areas

Past IEPA inspections have noted that the facility poses a potential for air releases. During the VSI, facility waste piles (SWMUs 3, 7, and 8) and waste in open bins associated with SWMU 1 were wet from recent heavy rains and posed a low potential for releasing to air. However, the waste piles are not generally sprayed or covered and during dry weather could pose a moderate to high potential for

release to air. The potential for release of hazardous constituents is unknown because auto fluff, media float, and shaker dirt have not been adequately characterized. Sampling of auto fluff from the On-Site Landfill (SWMU 2) in 1988 indicated the presence of PCBs (above 50 ppm) and lead above hazardous limits under RCRA. Sampling of the Auto Fluff Waste Piles (SWMU 3) in 1993 indicated the presence of PCBs above 50 ppm in nine of 15 samples. Lead and volatile organic compounds were present above detection limits but below RCRA hazardous waste characterization limits. SLAS maintains that facility wastes are nonhazardous. If the On-Site Landfill (SWMU 2) is adequately covered, it should pose a low potential for release to air. Other facility SWMUs (Nos. 4, 5, and 6) pose a low potential for release to air. SWMUs 4 and 5 manage waste oil or waste fuel in covered or closed containers and SWMU 6 is inactive.

The facility conducts groundwater monitoring at four groundwater wells, as required by IEPA nonhazardous waste landfill permits for the On-Site Landfill (SWMU 2). Based on 1988 waste analysis data, IEPA cited SLAS for not instituting a RCRA groundwater monitoring program. However, the facility maintains it is not RCRA-regulated. An IEPA review of groundwater data from November 1991 through July 1992, indicated that there was a significant change in water quality and that SWMU 2 may be impacting groundwater. No formal groundwater study has been conducted, however. Facility SWMUs, including the On-Site Landfill (SWMU 2), the waste piles (SWMUs 3, 7, and 8), and most bins associated with SWMU 1 are completely or partially unlined. Leachate has been observed from the east side of SWMU 2 in the past. However, the extent of hazardous constituents present in facility waste is not well documented and is disputed. Therefore, the potential for release of hazardous constituents to groundwater can not accurately be determined. SWMUs 4 and 6 pose a low potential for release to groundwater because they manage waste in aboveground units. SWMU 6 is inactive and SWMU 4 is located on a concrete pad. SWMU 5, the Waste Oil Sump, includes a below grade metal sump for waste oil. The integrity of this unit and its potential for release to groundwater could not be determined because the sump contained oil and water during the VSI.

In the past, IEPA inspections have documented oil stains around product fuel storage tanks, a Waste Oil Storage Area (SWMU 4), a bus disassembly area, and the Waste Oil Sump (SWMU 5). Soil samples taken by IEPA indicated that two samples from the shear area near SWMU 5 and the bus disassembly area were saturated with oil (AOC 1). During the VSI, some fuel stains were observed

around product fuel storage tanks near the bailer (AOC 1) and around the sump at SWMU 5. SWMUs 4 and 6 pose a low potential for release to on-site soils. They are covered, aboveground units and manage waste oils. SWMU 4 is located on a concrete pad and SWMU 6 is inactive. SWMU 5 has visible soil staining around the sump.

SWMUs 1, 3, 7, and 8 have no secondary containment. SWMU 2 poses a low potential for release to surface soils because it manages waste primarily below the ground surface. However, if waste is inadequately covered as it has been in the past, there is a potential for release to on-site soils through air emissions. Also, the landfill is unlined and waste is in direct contact with subsurface soils at the facility. The potential for release of hazardous constituents from facility SWMUs (Nos. 1, 2, 3, 7, and 8) can not be accurately determined because these wastes have not been adequately characterized. The facility maintains that all waste generated and managed at the site is nonhazardous but industry and IEPA sampling data indicate that lead, PCBs, and other heavy metals may be present in shredder wastes.

In 1981, On-Site Landfill (SWMU 2) wastes (type not specified) were observed releasing to on-site wetlands. The SLAS facility contains on-site surface water bodies at, and around, SWMU 2. SLAS has also been cited for unpermitted process water discharges. PA files do not document any releases to off-site surface water, however. During the VSI, facility representatives stated that no unpermitted water discharges occur at SLAS and that no process water is discharged. Facility SWMUs do not have secondary containment controls for surface water runoff. However, the levee system around the facility would generally prevent surface water runoff. Therefore, facility SWMUs pose a low potential for release to off-site surface waters and have documented releases (from SWMU 2) to on-site wetland areas.

PRC recommends no further action for SWMU 6 which has been removed. PRC recommends that SLAS inspect all surface soils for visible contamination and remove and properly dispose of any contaminated soils (AOC 1). Units storing product or spent fuel and oil (SWMUs 4 and 5) should be inspected regularly and provided with adequate secondary containment. Auto fluff, media float and shaker dirt should be analyzed to determine if they are hazardous under RCRA, subject to TSCA-regulation, or contain hazardous constituents which could release to the environment. Based on analytical results, the potential for release from SWMUs 1, 2, 3, 7, and 8, should be determined for

each environmental media. Appropriate preventive measures such as providing secondary containment should be taken, as necessary. Additional investigations of potential releases should be conducted and corrective actions should be taken, as necessary. Additional groundwater investigation may be required for SWMU 2, the On-Site Landfill, to determine if releases of hazardous wastes have occurred from the landfill and if corrective actions are warranted.

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. R05032 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has usually exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading or unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release of hazardous waste or constituents to the environment has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where a strong possibility exists that such a release might occur in the future.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff; inspecting the entire facility to identify all SWMUs and AOCs; photographing all visible SWMUs; identifying evidence of releases; making a preliminary selection of potential sampling parameters and locations, if needed; and obtaining additional information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the St. Louis Auto Shredding, Inc. (SLAS), facility (EPA Identification No. ILD 984 767 392) in National City, St. Clair County, Illinois. The PA was

completed on August 31, 1993. PRC gathered and reviewed information from Illinois Environmental Protection Agency (IEPA) files, EPA Region 5 RCRA files, Federal Emergency Management Agency (FEMA) files, and U.S. Department of Interior (USDOI), U.S. Department of Commerce (USDC), and U.S. Department of Agriculture (USDA) documents. IEPA employees familiar with the facility were also contacted. The VSI was conducted on September 21, 1993. It included interviews with facility representatives and a walk-through inspection of the facility. PRC identified eight SWMUs and one AOC at the facility.

The VSI is summarized and 19 inspection photographs are included in Appendix A. Field notes from the VSI are included in Appendix B.

2.0 FACILITY DESCRIPTION

This section describes the facility's location; past and present operations; waste generating processes and waste management practices; history of documented releases; regulatory history; environmental setting; and receptors.

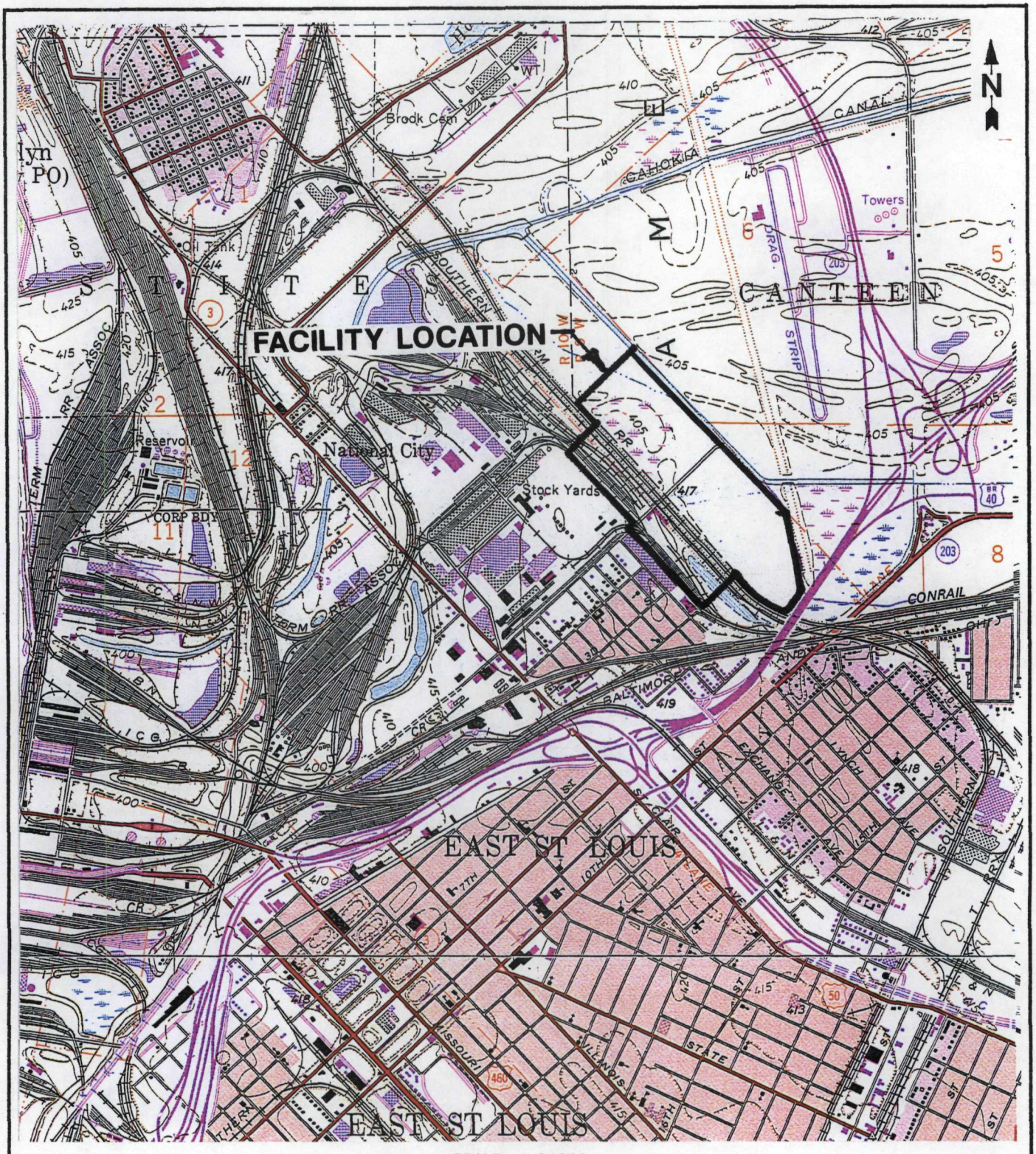
2.1 FACILITY LOCATION

The SLAS facility is located at 1200 North First Street, National City, St. Clair County, Illinois. Figure 1 shows the location of the facility in relation to the surrounding topographic features (latitude 38° 38' 00" N and longitude 90° 08' 25" W). The facility occupies about 100 acres in an industrially zoned area. Most of the facility property is owned by SLAS. However, railyard operations occur on adjacent land that SLAS leases from East St. Louis Junction Railroad Company. This leased property is located within National Stock Yards, Illinois (Jenner and Block 1993d). The facility is bordered by railroad tracks, commercial businesses, and residences on the west and branches of the Cahokia drainage canal on the east and north. Interstate-55 borders the facility to the south (USGS 1982).

2.2 FACILITY OPERATIONS

SLAS was incorporated in 1975 and has always operated at its current location (Jenner and Block 1993b). SLAS is a subsidiary of Pielet Brothers' Trading, Inc. SLAS employs about 74 people during most of the year and about 92 people when the media plant is operating. The facility generally operates 8 to 9 hours per day, 5 to 6 days per week.

SLAS shreds automobiles and appliances to collect recoverable ferrous metal that is sold to steel plants. Nonferrous alloys (for example, die cast, aluminum, copper, and brass) are also recovered and sold. The facility also bails metal scrap for sale in a bailer. SLAS dismantles railcars, large metal objects, and buses in the railyard to recover metal for resale. About 8,000 tons of scrap metal per month are shipped off-site. However, the frequency of shipments varies depending on the market value for each scrap metal. Nonrecoverable scrap such as auto fluff waste and media float waste is stored and disposed on-site.



SOURCE: MODIFIED FROM USGS, GRANITE CITY, ILLINOIS–MISSOURI, QUADRANGLE 1982 AND CAHOKIA, ILLINOIS–MISSOURI, QUADRANGLE, 1974

ST. LOUIS AUTO SHREDDING, INC.
NATIONAL CITY, ILLINOIS

FIGURE 1
SITE LOCATION

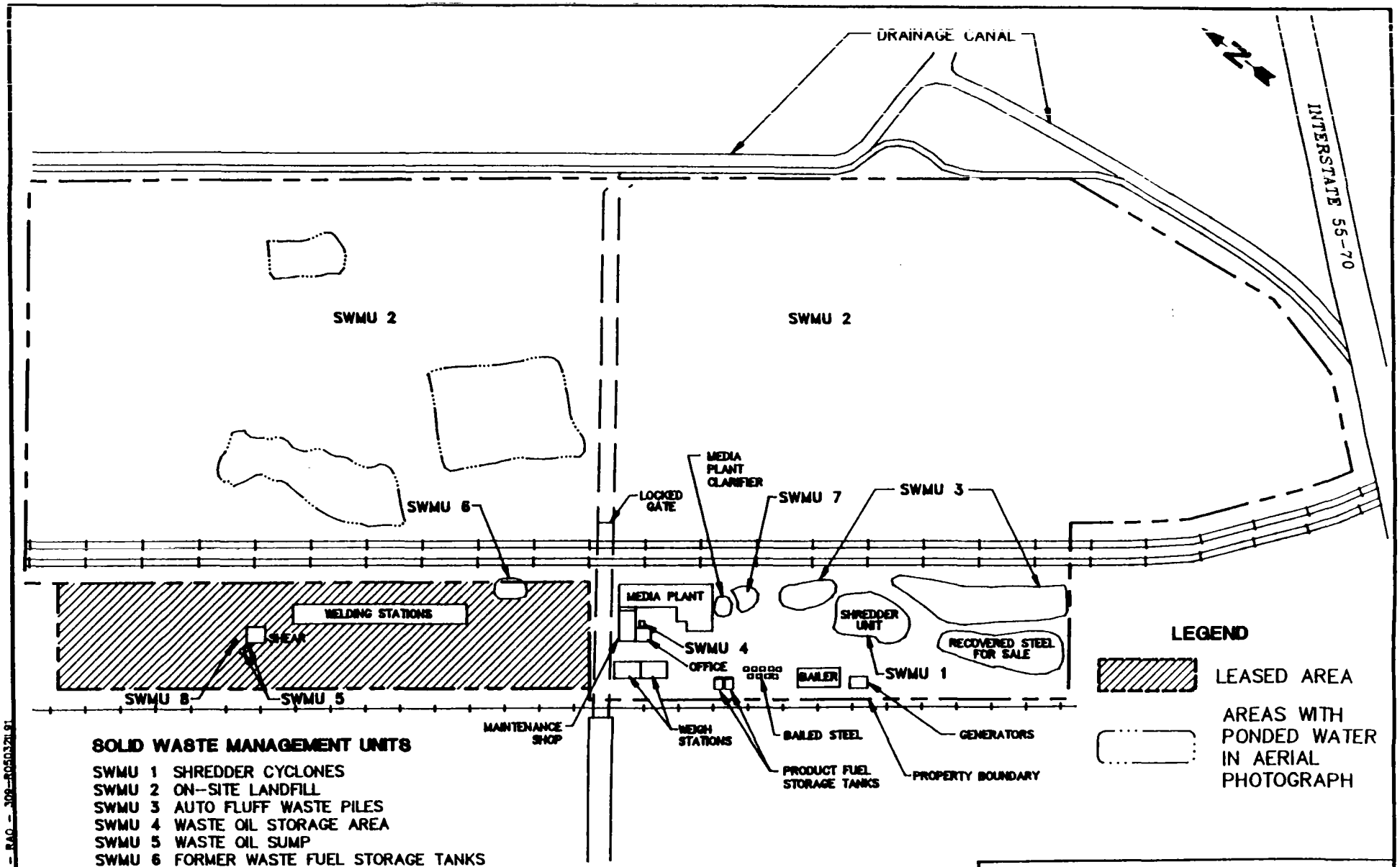
PRC ENVIRONMENTAL MANAGEMENT, INC.

Facility buildings and major operating units include (1) an office and weigh station, (2) a maintenance shop, (3) a shredder, (4) a bailer, (5) a media plant, (7) welding stations, and (8) a shear (see Figure 2). A Waste Oil Storage Area (SWMU 4), Former Waste Fuel Storage Tanks (SWMU 6), product fuel storage tanks, and diesel-engine generators (used in extreme weather to power facility equipment) are, or were, located as shown in Figure 2. Other facility landmarks include an On-Site Landfill (SWMU 2) and an access road.

Scrap automobiles and appliances are brought to SLAS by scrap collectors who are paid on a weight basis. Scrap is weighed at the weigh station on large, in ground, scales adjacent to the office. SLAS requires that capacitors (which could contain polychlorinated biphenyl [PCB] compounds) be removed from appliances before they are sold to SLAS. Automobile wheels, gas tanks (which could explode in the shredder or contain traces of lead), and batteries (which could contain lead or a nickel-cadmium alloy) are supposed to be removed from automobiles. An inspection station is located before the shredder to ensure these items have been removed.

A crane feeds automobiles and appliances to the shredder, where a hammermill crushes and shreds the items. A water spray is used during shredding to control temperature and dust. Facility representatives stated that the high temperature in this area evaporates the water and no wastewater is generated. After shredding, material is moved by conveyors to a separation area where rotary magnets recover ferrous metal from the scrap and two cyclones separate light scrap (paper, insulation, cloth, glass, plastic, and similar materials) referred to as auto fluff. Two operators are located along the first conveyor to remove copper scrap, which decreases the value of recovered ferrous metal. Remaining nonferrous metal scrap is passed to another conveyor where a third cyclone separates remaining auto fluff from nonferrous alloys. According to the facility representatives, about 400 tons of material per day pass through the shredder.

Nonferrous alloys are further processed in the media plant. The media plant includes a media float unit, which uses fluids and differences in material density to separate nonferrous alloys from each other and from media float. Media float is similar to auto fluff but is generated at the media plant rather than at the shredder. A chemical additive is added to the media float unit water to enhance material separation. According to the facility representatives, media float unit water is not discharged but is recycled continuously between a clarifier, the pump house, and the media float unit. Scrap



SOLID WASTE MANAGEMENT UNITS

SWMU 1 SHREDDER CYCLONES
SWMU 2 ON-SITE LANDFILL
SWMU 3 AUTO FLUFF WASTE PILES
SWMU 4 WASTE OIL STORAGE AREA
SWMU 5 WASTE OIL SUMP
SWMU 6 FORMER WASTE FUEL STORAGE TANKS
SWMU 7 MEDIA FLOAT WASTE PILES
SWMU 8 SHAKER DIRT WASTE PILES

AREA OF CONCERN

AOC 1 STAINED SOIL AREAS (VARIOUS LOCATIONS THROUGHOUT THE FACILITY)

SOURCE: MODIFIED FROM SLAS AERIAL PHOTOGRAPH 1988 AND AEEI 1992

NOT TO SCALE

ST. LOUIS AUTO SHREDDING, INC.
NATIONAL CITY, ILLINOIS

FIGURE 2
FACILITY LAYOUT

PRC ENVIRONMENTAL MANAGEMENT, INC.

SLASITELDWG -- 11/29/93 -- RAO -- 309-R0503/2L91

enters the media float unit by conveyor and is cycled through the unit three times. Other metals such as copper, brass, and stainless steel are separated manually from a conveyor located at the end of the media float unit. These metals are also sold. The media plant operates about 3 to 6 months per year.

After separation, scrap metals are stored in segregated piles until sold. During the VSI, various scrap metals were piled inside the media plant and piles of steel and die-cast metal were piled outside, waiting for sale. Inside the media plant, PRC also observed several batteries (see Photograph No. 6) that had been retrieved from large equipment and buses at the railyard area. These batteries were stored in boxes or on pallets. The facility representatives stated that these batteries had been in the media plant for a few years but would be sent off-site for reclamation soon and were not considered a regularly generated waste. In October 1993, these batteries were sold to Doe Run company, a battery reclaimer in Boss, Missouri (Jenner and Block 1993c and 1993d).

A bailer is located near the shredder along the southwestern edge of the facility. The bailer is used to compact scrap stamping metal and coiled metal brought in by scrap collectors. This scrap does not need to pass through the shredder or the media plant. The bailer employs about 3 people and processes about 1,000 to 1,500 tons of metal per month.

Railyard operations occur on leased land. At the railyard, welding stations are used to manually cut up rail cars and other large metal items. A wheel press is used to remove the rail wheels from the axles. A shear is used to compact and cut the metal. Sheared scrap iron falls onto a shaker table that shakes dirt and debris from the metal. Up to 100 tons of scrap per day may be produced in this area. The recovered iron is sold to steel mills. Shaker dirt consists primarily of iron and is generally sold with the recovered iron.

2.3 WASTE GENERATION AND MANAGEMENT

This section describes waste generation and management at the SLAS facility. The facility's SWMUs are identified in Table 1. The facility layout, including SWMUs and AOCs, is shown in Figure 2. The SLAS facility generates the following wastes: auto fluff waste, media float waste, shaker dirt waste, and waste oil and fuel. Waste generation and management are discussed below. The facility's waste streams are summarized in Table 2.

TABLE 1

SOLID WASTE MANAGEMENT UNITS

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit[a]	Status
1	Shredder Cyclones	No	Active
2	On-Site Landfill	Yes[b]	The landfill has been inactive since September 1992. Landfill disposal will resume when a new permit is granted.
3	Auto Fluff Waste Piles	No[c]	Active
4	Waste Oil Storage Area	No	Active
5	Waste Oil Sump	No	Active
6	Former Waste Fuel Storage Tanks	No	Inactive
7	Media Float Waste Piles	No	Active
8	Shaker Dirt Waste Piles	No	Active

Note:

a. A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.

b. IEPA and EPA regulate this SWMU as a RCRA land-disposal unit based upon 1988 landfill waste analysis results (see Section 2.5).

c. From 1988 until 1993, IEPA considered the auto fluff waste pile to be a hazardous waste under RCRA. Based on 1993 sampling results, IEPA determined that the auto fluff waste pile is not hazardous waste under RCRA but may be subject to regulation under the Toxic Substances Control Act (TSCA) (see Section 2.5).

TABLE 2

SOLID WASTES

Waste/EPA Waste Code[a]	Source	Solid Waste Management Unit
Auto Fluff/D008[b]	Shredder and Shredder Cyclones	SWMUs 1, 2, and 3
Media Float/Never analyzed[c]	Media Plant	SWMUs 2 and 7
Shaker Dirt/Never analyzed[c]	Railyard Operations	SWMUs 2 and 8
Waste Fuel/NA[d]	Locomotive and Bus Disassembly	SWMU 6
Waste Oil/NA[d]	Maintenance and Railyard Shear	SWMUs 4 and 5

Notes:

[a] Not applicable (NA) designates nonhazardous waste.

[b] The facility disputes IEPA's position that this waste is hazardous under RCRA but has not performed an independent analysis of this waste. IEPA considers auto fluff waste in the On-Site Landfill (SWMU 2) to be hazardous under RCRA based upon 1988 sampling results. IEPA no longer considers the Auto Fluff Waste Piles (SWMU 3) to be hazardous under RCRA based upon 1993 sampling results. However, IEPA determined that this waste may be subject to TSCA regulation.

[c] According to the facility, this waste is nonhazardous. However, the facility has not conducted an independent analysis for this waste stream.

[d] According to the facility, this waste is nonhazardous and is analyzed by the recycler, Gateway Petroleum. The facility could not provide written verification that this waste is nonhazardous (Jenner and Block 1993c).

Auto fluff is generated by shredder operations. The shredder is equipped with three Shredder Cyclones (SWMU 1) to control particulate emissions. Two cyclones are located on the ferrous separation side of the shredder. These cyclone units separate auto fluff and control particulate emissions and are permitted by Illinois Operating Permit No. 76010080 (IEPA 1991e). The third cyclone separates auto fluff and controls emissions from the nonferrous side of the shredder but has no emission stack and therefore is not permitted as an emission source (Jenner and Block 1993d). The auto fluff waste from the cyclones and shredder area is managed in the Auto Fluff Waste Piles (SWMU 3) and the On-Site Landfill (SWMU 2). Recovered ferrous metal is stored in a pile at the end of the shredder until it is sold to steel mills. Recovered nonferrous metal mixed with some auto fluff material is stored in a pile until processed in the media plant.

According to the facility, the typical auto fluff composition is about 19.3 percent sponge and foam; 33.3 percent fabric and batting; 22.2 percent plastics, 6.1 percent metal greater than or equal to 12 mesh in size; and 19.1 percent glass, sand, dirt, and metal under 12 mesh in size (AEEI 1992).

IEPA collected four composite samples of auto fluff from the landfill in 1988. Two samples contained lead concentrations greater than 5 parts per million (ppm), the Extraction Procedure (EP) toxicity limit for hazardous waste characterization. These samples also contained PCB concentrations of greater than 50 ppm, the threshold limit for Toxic Substances Control Act (TSCA) regulation. IEPA determined that the landfilled auto fluff was hazardous under RCRA for lead (EPA waste code D008) (IEPA 1988a).

In 1993, an IEPA contractor conducted sampling of the Auto Fluff Waste Piles (SWMU 3). None of the samples analyzed met the criteria for hazardous waste characterization under RCRA (IEPA 1993b), although the samples did contain detectable levels of lead, cadmium, and volatile organic compounds (VOC). Nine of the 15 samples had PCB concentrations above 50 ppm. IEPA determined that this waste may be subject to TSCA regulation (IEPA 1993a). SLAS's legal representative has questioned the quality control for IEPA contractor samples and whether the data indicate that the waste should be TSCA regulated. Splits of the 1993 IEPA samples were taken and analyzed by SLAS's contractor and indicated lower PCB concentrations (Jenner and Block 1993a). According to the facility representatives, auto fluff waste is heterogeneous and isolated samples may contain hazardous constituents. However, the facility maintains that the waste is nonhazardous.

A 1991 EPA publication, *Project Summary: PCB, Lead, and Cadmium Levels in Shredder Waste Materials: A Pilot Study*, found that auto fluff samples from seven U.S. shredder facilities all contained detectable concentrations of PCBs, lead, and cadmium (at varying levels). PCBs demonstrated a low potential for leaching from auto fluff. Lead and cadmium showed some potential for leaching using the EP. The study concluded that additional research was warranted to determine the potential hazards associated with auto fluff residue and to determine the economic viability of the shredder industry and potential impacts to that industry resulting from various approaches to waste management (EPA 1991).

Media float is generated by the media plant that separates recoverable nonferrous alloys from each other and from nonmetallic debris (media float). The media float unit includes a media plant clarifier located outside the media plant to separate oil and suspended solids not removed in the unit from the media float unit water so that it can continuously be recycled. Oil is skimmed from the clarifier water and managed in SWMU 4. Sludge which can include bits of glass, fabric, and plastic mixed with dirt is periodically removed and combined with the media float collected from the media float unit. Media float is dumped and stored next to the clarifier in Media Float Waste Piles (SWMU 7) until disposed with auto fluff in the On-Site Landfill (SWMU 2). Media float has not been analyzed to determine if it is hazardous. However, the facility maintains that this waste is nonhazardous.

Rail cars and other large items are disassembled or cut into pieces of scrap metal, which are sheared into smaller pieces (about 15 inches wide by 18 inches long) in the railyard area. After shearing, metal scrap falls onto a grated conveyor (shaker table) which separates debris known as shaker dirt from the scrap metal. The shaker dirt falls from the shaker table onto the ground. Shaker dirt has not been analyzed to determine if it is a hazardous waste. According to SLAS, the shaker dirt is generally mixed with scrap ferrous metal and sold to the steel mills. When buyers complain that the scrap is too dirty, mixing is discontinued and the shaker dirt is stockpiled in small Shaker Dirt Waste Piles (SWMU 8) until mixed with scrap for sale or disposed in the On-Site Landfill (SWMU 2). The facility does not track waste generation for this waste stream but stated that only small quantities of this waste are generated.

Waste fuel and oil are also generated in the railyard area. SLAS has periodically generated waste fuel from locomotive and bus disassembly. This waste fuel was stored in several aboveground railroad

tank cars in the railyard area. These Former Waste Fuel Storage Tanks (SWMU 6) were emptied in 1992 and 1993 to dispose of waste fuel that had accumulated over several years. Since the VSI, the Former Waste Fuel Tanks (SWMU 6) have been disassembled for scrap (Jenner and Block 1993d).

The shear generates small quantities of waste oil. A Waste Oil Sump (SWMU 5) adjacent to the shear collects waste oil generated by the shear during operation and maintenance. Waste oil from the sump is transferred to a portable metal transfer container (part of SWMU 5) and is transferred periodically to the tank in the Waste Oil Storage Area (SWMU 4) (Jenner and Block 1993c). Maintenance waste oil is also generated from equipment maintenance. Waste oil includes crankcase, lube, and hydraulic oils. Until 1988, waste oil was stored in drums in the Waste Oil Storage Area (SWMU 4). In 1988, SLAS installed an old locomotive tank in SWMU 4 to store waste oil. Oil collected from the media plant clarifier is also managed in the Waste Oil Storage Area (SWMU 4). The facility generally generates about 1,900 gallons of waste oil annually (Jenner and Block 1993d) which is removed from SWMU 4 for off-site recycling by Gateway Petroleum of Belleville, Illinois.

About 169,900 pounds of waste fuel and oil were removed from SLAS between September 1992 and August 1993 (Gateway 1992 and 1993a, b, and c). According to the facility representatives, these shipments included waste from SWMUs 4 and 6. Waste fuel and oil are analyzed by Gateway Petroleum and are nonhazardous, according to the facility representatives. However, SLAS could not provide written verification that this waste is nonhazardous (Jenner and Block 1993c).

2.4 HISTORY OF DOCUMENTED RELEASES

This section discusses the history of documented releases to groundwater, surface water, air, and on-site soils at the facility.

The facility landfill has four groundwater wells that are monitored quarterly. A recent IEPA review of groundwater monitoring data for the period from November 1991 through July 1992, concluded that there has been a significant change in water quality and that the landfill may be impacting groundwater at the facility (IEPA 1993c). According to the facility representatives, groundwater in the area is generally not of a high quality.

During various IEPA inspections in 1980 and 1981, IEPA noted water discharges at the SLAS facility. One process water discharge from the clarifier associated with the media plant was observed by IEPA on November 3, 1981. Discharge from this location was sampled and oil and "numerous heavy metals were present in significant concentrations" according to an IEPA memorandum. These materials were discharging to the east side of the railroad tracks (IEPA 1981). The facility representative stated that the water discharges were not leaving the property because of levees around the facility and because of percolation and evaporation (IEPA 1981). An April 12, 1988, IEPA inspection revealed that SLAS conducted a sanitary landfill operation in a manner that resulted in leachate entering Waters of the State (on-site wetlands) (IPCB 1989). The document does not specify that leachate exited the facility property. IEPA actions included compliance inquiry and enforcement actions. During the VSI, SLAS representatives stated that minor discharges from the clarifier ceased in the early 1980s (Jenner and Block 1993c). Soils at the former discharge point were not sampled because the outlet was on SWMU 2 and SLAS found that any release would be detected by quarterly groundwater monitoring conducted for the landfill (Jenner and Block 1993d).

Various IEPA inspections have noted open burning of waste or other materials at the landfill (IEPA 1979a and 1992c). A 1986 IEPA air compliance inspection report stated that a car gas tank had passed through the shredder's hammermill and exploded. Nearby residents complained about the explosion (IEPA 1986a). The SLAS facility now closely monitors cars for gas tanks before allowing cars to pass through the shredder.

An October 1988 IEPA inspection noted several Stained Soil Areas (AOC 1), contamination and auto fluff waste distributed across the facility. The following areas were noted:

- Contamination was observed by welding and disassembly areas along the east side of the railroad tracks.
- Oil was observed dripping from the railyard shear onto the ground rather than into the Waste Oil Sump (SWMU 5) because dirt and metal shavings obstructed the oil flow to the sump. According to SLAS, 90 weight oil was used in the shear.
- An area northeast of the wheel press (location not specified) was observed to be saturated with oil. SLAS stated that bus engines were dismantled in this area.
- Soil and gravel around product fuel storage tanks northwest of the shredder were saturated with oil, apparently due to ongoing spills in this area (IEPA 1988a).

IEPA sampled soils in the above areas. Surface soil samples from between welding station No. 1 and the railroad tracks and from an area behind welding stations No. 4 and 5 were discolored and metal shavings were present. Two samples from (1) the shear area and (2) the bus engine disassembly area were saturated with oil. Little soil was available for a sample from the fuel storage tank area (IEPA 1988a). During this same inspection, two samples of auto fluff were taken from across the railroad tracks, on non-SLAS property (IEPA 1988a). No analytical data for these samples or record of specific IEPA action based upon these data were located during the PA/VSI.

2.5 REGULATORY HISTORY

IEPA granted SLAS a permit (No. 1976-21-DE) to develop a nonhazardous solid waste landfill site consisting of about 80 acres. The landfill was permitted to handle the unreclaimed residue of automobile shredding operations (auto fluff waste). This residue consists primarily of glass, rubber, plastic, and fabric (IEPA 1976a and AEEI 1991).

IEPA inspections from 1976 through 1978 noted various repeated violations at the landfill, including: (1) inadequate waste cover; (2) inadequate waste compaction and spreading; (3) open waste burning; and (4) operation without an operating permit. IEPA filed an Enforcement Notice against SLAS in 1979 in response to repeated violations (IEPA 1979a). SLAS's contractor addressed the cited items and IEPA stated that compliance would be closely monitored (IEPA 1979b). Subsequent violations, including water ponded in disposal trenches, water leaching from the east side of the landfill, inadequate cover, and inadequate waste spreading and compacting were noted from 1979 through 1981 (IEPA 1980a, 1980b and 1981). In 1981, SLAS responded to an IEPA Notice of Violation letter stating that it would seek a supplemental permit and cease poor landfill practices (SLAS 1981). In 1981, the facility was placed on the EPA Open Dump Inventory (IEPA 1980c and EPA 1981). In December 1981, the IPCB issued Order No. 80-185 for numerous violations cited from 1975 through 1981 (IPCB 1981). SLAS appealed this order but the order was affirmed by the Appellate Court of Illinois (ACOI 1982). An inspection in December 1982 again noted water pooled in landfill trenches, inadequately covered waste, and scavengers burning waste (IEPA 1982). No records of landfill inspections are documented in the PA files for the period from 1983 through 1988.

An IEPA inspection and file review in April 1988 identified the following violations: (1) improperly covering refuse; (2) inadequately providing final cover; (3) causing or allowing scavenging operations; (4) accepting waste without necessary permits; (5) causing or allowing open burning of refuse; (6) conducting operations at the landfill so that leachate flowed into waters of the state (on-site saturated wetlands); and (7) causing or allowing refuse in standing or flowing water. An IEPA administrative citation was subsequently issued (IEPA 1988e and 1988f). No IEPA follow-up to this citation is documented in the PA files.

In 1988, IEPA representatives learned that auto fluff from shredder facilities could be a hazardous waste (IEPA 1988a). IEPA sampling and analysis in 1988 revealed two landfill waste samples containing hazardous lead concentrations under RCRA (greater than 5 ppm) and PCB concentrations greater than 50 ppm (IEPA 1988a). Based on these data, IEPA determined that the SLAS was a RCRA-regulated facility. SLAS maintained that the waste was nonhazardous and that the facility was not subject to RCRA regulation (IEPA 1992f). Further IEPA inspections cited SLAS for a variety of RCRA regulation violations (IEPA 1988a; 1989b and c; 1990a, c and d; 1991 a and d; and 1992a, f and g). A Notification of Hazardous Waste Activity Form, assigning the facility EPA Identification Number ILD 984 767 392, is located in the PA file (EPA 1988). The form was completed by EPA and is not signed by SLAS. This RCRA regulatory-status issue was forwarded to the Illinois Attorney General in April 1991 (IEPA 1992f) but a final determination was not made.

SLAS responded to charges of RCRA violations by stating that the facility was a nonhazardous waste generator and that the cited regulations were not applicable to SLAS (Jenner and Block 1991). The facility's completed IEPA 1991 Hazardous Waste Report Identification and Certification Form states that the facility considered itself a nongenerator because it never generated hazardous waste (SLAS 1992).

In 1988, Pielet Brothers' Trading, Inc., appealed an IPCB and IEPA finding that SLAS was operating without a permit and that SLAS was in violation of seven sections of the Illinois Environmental Protection Act. SLAS raised the following issues: (1) whether a permit was issued by "operation of law" because IEPA did not respond to the permit application within the required timeframe; and (2) whether the IPCB erred in finding SLAS in violation of IEPA's open burning prohibition. The

Appellate Court of Illinois (ACOI) ruled in SLAS's favor that the permit had been issued by operation of law. However, the ACOI also found SLAS was responsible for on-site burning (ACOI undated).

On August 9, 1991, IEPA requested that SLAS submit a Significant Permit Modification Application to meet revised IEPA regulations because the facility planned to operate past September 18, 1992 (IEPA 1991b). The facility submitted a revised closure plan, post-closure care plan, and cost estimate documents in 1991 (AEEI 1991). The facility submitted two permit applications in 1992, including: (1) one application to continue using the active area of the landfill during closure; and (2) a second application to open a new area of the landfill (PRC 1993). The recent permit applications were denied in January 1993. SLAS is currently appealing this IEPA decision (Jenner and Block 1993c). Until permit approval is obtained media float and auto fluff are being stored in on-site waste piles (SWMUs 3 and 7). These units have been present over a year and are considered land disposal units under revised IEPA regulations (PRC 1993).

An IEPA air compliance inspection in June 1986 noted that the facility had not obtained required permits for on-site electricity generators and had expired permits for existing emission sources (hammermill, rotary magnets, conveyors, and cyclones) (IEPA 1986a and b). A 1987 IEPA air compliance inspection noted that the cyclone for the hammermill was not properly maintained and that excess particulate emissions were observed (IEPA 1987a and b). The facility addressed these violations (IEPA 1988d). IEPA conducted air pollution control inspections of the facility in August 1988, July 1989, September 1990, and April 1991. Light emissions were noted from the first cyclone during the 1991 inspection, but no air violations were cited (IEPA 1988b, 1989a, 1990b and 1991c). An October 1988 inspection noted two violations: (1) failure to obtain a construction and operating permit for an armature furnace used to bake varnish off diesel train armatures, and (2) failure to obtain an operating permit for a cyclone and afterburner used to control equipment for the armature furnace (IEPA 1988c). The facility obtained air permits for these units (IEPA 1990e). During the VSI, the inactive armature furnace was observed in the media plant. Based on an air compliance inspection also conducted in 1992, SLAS was cited for violations of the Illinois Environmental Protection Act for open burning of railroad ties (IEPA 1992d). A pre-enforcement conference for the open burning violation was scheduled July 7, 1992 (IEPA 1992e). The resolution of this matter is not documented in the PA files.

In 1993, IEPA contracted Hanson Engineers, Inc. (Hanson) to sample an auto fluff waste pile. Hanson collected samples from a large auto fluff waste pile that measured about 200 feet long, up to 150 feet wide, and about 35 feet high. Fifteen samples were analyzed for PCBs and metals. One sample was also analyzed for volatile organic compounds. Several VOCs were present in the one sample analyzed for VOCs, specifically: methylene chloride (27 ppm), acetone (120 ppm), trichlorofluoromethane (50 ppm), and two unknown hydrocarbons (20 and 10 ppm). Lead (maximum 1.82 ppm), barium (maximum 2.7 ppm), and cadmium (maximum 0.35 ppm) were also detected. The reported concentrations of analytes were below regulatory concentration limits for hazardous waste characterization under RCRA (Hanson 1993). At least one PCB was detected in each sample at concentrations above the laboratory detection limit (Hanson 1993). Nine samples contained PCB concentrations above 50 ppm indicating the waste may be subject to TSCA regulation (IEPA 1993a).

Based on 1993 sampling data, IEPA determined that the facility was not currently generating a hazardous waste and that numerous RCRA-related, alleged violations were considered technically remedied. Because the old portions of the landfill had not been characterized, alleged violations related to the landfill remain unresolved. Outstanding alleged violations for the landfill include: (1) SLAS has not made a waste determination for the auto fluff in the landfill; (2) the facility does not have a RCRA permit for the landfill; (3) the facility did not submit annual reports for the landfill disposal activities; (4) a closure plan and post closure care plan have not been established in accordance with RCRA for the facility; and (5) runon, runoff, and wind dispersal are not being controlled at the landfill (IEPA, 1993b). During the VSI, facility representatives stated that SLAS still considers itself a non-RCRA regulated facility. EPA considers the facility a non-notifier and a RCRA-regulated land disposal facility. IEPA considers the landfill to be a RCRA-regulated unit and finds that the Auto Fluff Waste Piles may be subject to TSCA regulation.

SLAS does not have a National Pollutant Discharge Elimination System (NPDES) permit for surface water discharges and facility representatives stated that no process water is discharged. The facility has applied as a member of its trade association, the Institute of Scrap Recycling Industries, Inc., for a group NPDES stormwater runoff permit. The facility is also applying for a Granite City Sewer District permit for sanitary water discharges (Parente 1992).

2.6 ENVIRONMENTAL SETTING

This section describes the climate; flood plain and surface water; geology and soils; and groundwater in the vicinity of the facility.

2.6.1 Climate

The climate in the area of the facility is continental, which is typical of Southern Illinois. Weather fronts associated with low pressure systems produce frequent temperature, humidity, cloudiness, and wind direction changes during most seasons except summer (USDA 1978).

The annual average precipitation is about 38 inches (USDA 1978). June is normally the month with the highest rain (E&E 1988). Snowfall generally occurs from November through April and averages 12 inches, although more than this amount has occurred previously in one month (USDA 1978). Mean annual lake evaporation is 35 inches (USDC 1968) resulting in a net annual precipitation of about 3 inches. The 1-year 24-hour rainfall for the area is 3 inches (USDC 1963). The most intense rainfall through 1977 occurred southeast of East St. Louis in 1957. During this event, 13 to 16.5 inches of rain fell in an 11-hour period (USDA 1978).

The mean annual wind velocity is 9.3 miles per hour (E&E 1988). Wind direction is generally from the south to southwest in the summer and from the northeast in the winter. The prevailing wind direction is towards the northeast (AEEI 1992). The average growing season is about 200 days (USDA 1978).

2.6.2 Flood Plain and Surface Water

The facility is located about 1.5 miles east of the Mississippi River, the nearest major surface water body. Portions of the facility are naturally located in the 100-year flood plain (AEEI 1992). However, the existing levee and canal system around the facility protects the facility from a 200-year flood (IEPA 1980b). Levee structures and drainage canals along the northwest, northeast, and southeast boundaries of the facility prevent runon from adjacent areas. Discharges from the property can occur through three culverts with floodgates that were installed and are maintained by the Metro

East Sanitary District. On-site surface water movement is generally to the northeast towards previously excavated trench and soil borrow areas on the landfill and a marshy area on the southeast portion of the site (AEEI 1991). The Mississippi River is used for public drinking water supply, recreation, and freight trafficking (E&E 1988).

The facility property includes areas classified as wetlands. Specifically, areas of the landfill include Palustrine emergent wetlands (temporarily flooded, seasonally flooded, or semipermanently flooded) and a smaller Palustrine, unconsolidated bottom, excavated, wetland area (USDOI 1993). Areas on and around the landfill are noted in the PA files to be ponded and marshy.

2.6.3 Geology and Soils

Regional soil data indicate that the soil classification for the area is the Landes-Riley association: nearly-level sloping, well-drained to somewhat poorly drained, soils that formed in loamy and sandy alluvial sediment under forest and grasses on bottom lands (USDA 1978).

SLAS's contractor conducted on-site soil borings and subsurface probes in the early 1970s to determine the suitability of facility soils for closure activities. These studies indicated that a minimum of 7 feet of suitable soil was available with an average permeability of 1.0×10^{-8} centimeters per second at a compaction of 92.1 percent Standard Proctor Density (AEEI 1991).

Subsurface boring logs indicate that on-site soils include dark brown clay at 0 feet below ground surface (bgs) to 1 foot bgs, overlying gray clay from 1 foot bgs to 15 feet bgs. Gray clay mixed with traces of fine sand is present from 15 to 23 feet bgs, and gray fine sand is present from 23 to 25 bgs (AEEI 1991 and 1992). At one soil boring from the northwest area of the landfill, bedrock was reached at 102 feet bgs (AEEI 1992).

Site-specific surface soil survey maps indicate that the processing areas of the facility are urban land and the landfill area of the facility soils include Riley silty clay loam and Karnak silty clay with some wet and marshy areas. Riley silty clay loam is nearly level and located on the Mississippi flood plain. It includes small areas of silt and sand deposits. Karnak silty clay is nearly level soil found on

broad flats and on the Kashaskia River flood plains. These soils generally have low permeability and a high clay content, which limits their use (USDA 1978).

The regional geology of the area includes unconsolidated alluvium and glacial outwash. These materials overlie Mississippian and other bedrock layers. Granitic crystalline rock underlies bedrock in the area. At the SLAS facility, the uppermost bedrock consists of strata from the St. Louis Limestone or St. Genevieve Limestone of the Mississippi system (AEEI 1992).

Unconsolidated alluvium deposits generally include two main formations: the Cahokia Alluvium and the Mackinaw Member of the Henry Formation. The Cahokia Alluvium overlies the Mackinaw Member and consists primarily of silt, clay, and fine sand deposits. These deposits were impacted by the Mississippi River as evidenced by deposits of coarse material with finer-grained deposits. The Cahokia Alluvium generally varies in thickness from 15 to 30 feet. The underlying Mackinaw Member includes sand and gravel from glacial outwash. This formation varies in thickness from 70 to 100 feet and directly overlies the bedrock layers (E&E 1988). The overburden is about 100 feet adjacent to the facility (AEEI 1992).

2.6.4 Groundwater

Groundwater resources in the facility area are present in the unconsolidated alluvium and the underlying limestone and sandstone bedrock formations. Groundwater is abundant in the unconsolidated alluvium and most groundwater in the area is obtained from these materials. Groundwater recharge is from precipitation, indirect filtration from the Mississippi River, and inflow from bordering bluffs (AEEI 1992). According to SLAS permit applications, the facility is not located in a Clean Water Act-regulated recharge area or over a sole-source aquifer (AEEI 1992).

Groundwater in the unconsolidated alluvium generally follows the surface topography with discharge zones including wells and small streams, with some infiltration to deeper aquifers. According to an PA files indicate that groundwater in the vicinity of the facility probably flows toward a drainage channel on the northeast side of the site. Groundwater movement in the bedrock aquifers generally follows bedrock surfaces. At the facility, monitoring wells have groundwater levels of about 10 feet bgs at well completion (Andrews 1975). Groundwater flow trends to the north (AEEI 1992).

Groundwater wells along the Mississippi supply industrial and municipal water; however, the primary drinking water source for the area is an intake on the Mississippi river (E&E 1988). According to a 1988 review of private groundwater wells, 57 residences in East St. Louis use private well supplies for drinking water or irrigation purposes (E&E 1988). Parts of East St. Louis are located less than 0.25 mile from the facility (USGS 1982). There are no community wells within 1 mile of the facility (AEEI 1992 and IEPA 1976b). About four groundwater wells are located within 0.25 mile of the facility. None of these are north (downgradient) of the facility. One well is south, across I-55, in a residential area and could be used for drinking water. According to the 1992 SLAS permit application, any water wells located within 200 feet of the waste boundary of the northwest landfill areas will be removed or plugged when the new permit is granted (AEEI 1992). The permit application does not specify how this might be accomplished if the wells are on non-SLAS property.

2.7 RECEPTORS

The facility is located in an industrially zoned area. The facility is bordered by railroad tracks, commercial businesses, and residences on the west and branches of the Cahokia drainage canal on the east and north. Open land and Interstate-55 border the facility to the south (USGS 1982). The soil survey for St. Clair County indicates that sanitary landfills are located across the Cahokia Canal to the facility's north and about 0.5 mile east of the facility across Highway No. 203 (USDA 1978).

The nearest residences are located within 0.25 mile southwest of the facility and the nearest school is located less than 0.5 mile to the south. East St. Louis is located about 0.25 mile southwest of the facility. The population of East St. Louis was about 70,000 in 1970 and decreased to 55,200 in 1980 (USDA 1978 and E&E 1988). The population of St. Clair County was about 285,000 in 1970 (USDA 1978).

About 50 homes in East St. Louis have private groundwater wells that could be used for drinking or irrigation purposes (E&E 1988). About four wells are located within a quarter mile of the facility (AEEI 1992). Most of these appear to be in non-residential areas but one is located south (upgradient) across I-55 in a residential area and could be used for drinking water.

According to the facility representatives, facility access is controlled by partial fences, rail cars, levees, drainage canals, and a locked gate. Security guards patrol the facility at night. According to the landfill closure plan, landfill access is controlled by the drainage canals and levee system of the Metro East Sanitary District on the northwest, northeast, and southeast facility boundaries and by railroad lines along the southwest boundary. A lockable gate is present at the entrance to the landfill. Facility access is partially controlled as documented by various instances of vandals accessing the facility to collect wire and other materials for resale (ACOI undated).

No nature preserves, state parks, or federal parks are located within one mile of the facility. The closest such area is Frank Holten State Park, which is about 3 miles southeast of the facility (AEEI 1992). On-site wetlands are present at the landfill (see Section 2.6.2) (USDOI 1993).

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the eight SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and PRC's observations. Figure 2 shows the SWMU locations.

SWMU 1 **Shredder Cyclones**

Unit Description: The shredder is equipped with three metal cyclones that separate auto fluff from metal and control particulate emissions.

Two cyclones with diameters of 14 and 16 feet are located on the ferrous separation side of the shredder (see Photograph Nos. 1 and 2). These cyclones have stacks and are permitted as air emission sources. The third cyclone is located on the nonferrous separation side of the shredder (see Photograph No. 9). The cyclones are 10 to 20 feet above the ground surface as shown in the photographs.

Each cyclone has a metal outlet pipe located over a concrete-walled "bin." Auto fluff passes from the cyclone collection area through the cyclone outlet pipe into a ground-level collection bin. Each cyclone collection bin consists of two concrete walls and a ground surface or concrete base. The bins and the area around the bins collect auto fluff waste until it is transferred to the Auto Fluff Waste Piles (SWMU 3) by trucks and front-end loaders.

Date of Startup: This unit began operations in 1975.

Date of Closure: This unit is active.

Wastes Managed:	According to SLAS, the cyclones manage nonhazardous waste, however, IEPA maintains landfilled waste (which is primarily auto fluff) is hazardous under RCRA (see Sections 2.3 and 2.5).
Release Controls:	This unit separates auto fluff and serves as a release control for particulate emissions from the shredder. There are no other release controls associated with this unit. According to the facility, the cyclone bin nearest to the media plant has a concrete base (Jenner and Block 1993d).
History of Documented Releases:	Past IEPA air compliance inspections have noted minor emissions from the hammermill area of the shredder at or around the first cyclone (IEPA 1987b).
Observations:	During the VSI, the cyclones were operating and no visible emissions were noted. Auto fluff was observed in and around the concrete bins associated with each cyclone.
SWMU 2	**On-Site Landfill**
Unit Description:	The On-Site Landfill (see Photograph Nos. 16 and 17) occupies 80 acres on the eastern portion of the facility property. A dirt access road leads from the shredder and office area to the landfill. Landfill access is partially controlled by a locked gate and security guards (at night). Levees and canals are also located around this unit. The SLAS landfill consists of two primary waste disposal units, the southeast and northwest areas. Over 25.7 acres of the southeast area has received waste and has been active as recently as February 1992. About 16 acres of the northwest area have received waste (AEEI 1992). Originally, the landfill was to be operated by filling trenches

(Andrews 1976 and 1977). However, an area-fill method was used for disposal. The trench method was used previously in the northwest fill area to develop and fill a 3.1 acre area known as Trench No. 3. SLAS abandoned the trench method at IEPA's request. Above grade filling has resulted in a maximum landfill height of about 45 feet and 40 feet above the original grades in the southeast and northwest fill areas, respectively (AEEI 1992).

Auto fluff waste, media float waste, and shaker dirt waste generated at the process areas are stored in waste piles (SWMUs 3, 7, and 8) and transported to the landfill about one per month. The planned waste disposal rate is about 62,400 cubic yards annually (AEEI 1992).

Date of Startup: This unit began operations when the landfill was permitted in 1976.

Date of Closure: The southeast landfill areas became inactive in September 1992. The northwest fill area is planned for future use and a Significant Permit Modification Application was submitted to open this area in 1992 (AEEI 1992). No waste has been landfilled since September 1992 pending permit approval.

Wastes Managed: According to the facility, this unit manages only nonhazardous waste. However, IEPA maintains that waste deposited in the landfill is hazardous for lead (D008) under RCRA (see Sections 2.3 and 2.5).

Release Controls: The landfill is unlined. Auto fluff at the landfill has been covered with soil on a 30-day and then a daily basis. Four ground water monitoring wells are sampled quarterly and one leachate well is also monitored.

This unit is in an area surrounded by levees on all sides, which control surface water run on and run off. Surface drainage is

generally to the east. According to SLAS, surface water discharges from the facility could only occur under heavy amounts of precipitation (AEEI 1992).

History of Documented Releases: In the past, leachate from the landfill was observed on its east side. The PA files do not document that leachate was released off site from the facility property. Open burning and uncovered waste were observed during IEPA inspections. A recent IEPA review of groundwater monitoring data indicated that groundwater at the facility has been significantly impacted (IEPA 1993c).

Observations: During the VSI, waste was not being added to the landfill. Portions of the landfill observed during the VSI appeared relatively vegetated. The entrance to the landfill had a locked gate. Several monitoring wells were visible. No scavengers were observed during the VSI but the facility stated that scavenging is difficult to control in this area.

SWMU 3 **Auto Fluff Waste Piles**

Unit Description: The shredder generates auto fluff that is stored in this unit near the shredder (see Photograph Nos. 4 and 5) until it is transported to the On-Site Landfill (SWMU 2) for disposal. During the VSI, the primary auto fluff waste pile near the shredder measured over 100 feet long about 100 feet wide and about 50 feet high. The pile was large because no landfilling had occurred since September 1992. Smaller waste piles were also located in the area.

The unit's boundaries are not clearly delineated and at least part of their base is the ground surface.

Date of Startup: This unit began operations in 1975.

Date of Closure:	This unit is active.
Wastes Managed:	According to the facility, this unit manages only nonhazardous waste. However, in 1993, IEPA determined that this waste may be subject to TSCA regulation (see Sections 2.3 and 2.5).
Release Controls:	The waste piles are at least partially located on the ground surface without liners. No release controls are present.
History of Documented Releases:	IEPA inspections have noted that auto fluff gets dragged across the facility by trucks and loaders that drive onto the waste piles to move waste (IEPA 1988a). One inspection noted auto fluff waste on adjacent, non-SLAS property (IEPA 1988a).
Observations:	The primary waste pile and surrounding ground were saturated with water from recent heavy rains. Housekeeping was observed to be poor because scrap and auto fluff waste was strewn across the ground around the waste piles. Some of the waste was in standing water from recent rains.
SWMU 4	**Waste Oil Storage Area**
Unit Description:	Facility maintenance activities, the media plant, and the railcar shear generate waste oil. Waste oil was stored in this unit in drums in the past and has been stored in an aboveground locomotive tank (see Photograph Nos. 18 and 19) in the same area since about 1988. The tank is metal and has a capacity of about 4,000 gallons. The waste oil storage area is located on the east side of the office and includes a concrete base. No dikes, berms, or drains are located near the tank. Material is added to the unit by pumping or by manual transfer from buckets.

Date of Startup:	This unit began operations in 1975.
Date of Closure:	This unit is active.
Wastes Managed:	According to the facility, this unit manages only nonhazardous waste oil. The waste is picked up for off-site recycling by Gateway Petroleum of Belleville, Illinois. According to the facility representative, the waste is analyzed by Gateway Petroleum to ensure that it is nonhazardous. However, the facility could not provide written verification that this waste is nonhazardous (Jenner and Block 1993c).
Release Controls:	The waste oil tank is located on a concrete pad. No dikes or berms provide secondary containment for the tank. No drains were observed in the area.
History of Documented Releases:	This unit has no history of documented releases.
Observations:	The waste oil tank appeared to be in sound condition with no visible leaks or cracks. The concrete base of the unit was slightly stained but no visible cracks were present.
SWMU 5	**Waste Oil Sump**
Unit Description:	This unit consists of a sump (see Photograph Nos. 10, 11, and 12), which is adjacent to the railyard shear and a portable metal unit (see Photograph No. 13), which is used for transferring waste oil from the sump to the Waste Oil Storage Area (SWMU 4). The sump consists of an in-ground metal unit about 4 feet deep and 2 feet in diameter. Oil flows from the shear through a 2-inch wide

	drainage groove along the shear's side and from an outlet in the concrete base of the shear (see Photograph No. 13) across about 3 inches of ground surface to the sump. A wooden cover usually covers the sump. A portable metal unit measuring about 5 feet by 3 feet by 3 feet is used to transfer oil from the sump to SWMU 4. Ground surface surrounds the sump and underlies the metal transfer container.
Date of Startup:	This unit began operations in 1977.
Date of Closure:	This unit is active.
Wastes Managed:	According to the facility, this unit manages only nonhazardous waste oil which is periodically transferred to SWMU 4 for further management.
Release Controls:	This unit has no release controls. The sump is not bermed and the soil around the unit appeared to be stained with oil. The metal transfer container is located on the ground surface. No drains are located around this unit (see Section 2.4).
History of Documented Releases:	Stained soils have been observed around this SWMU. A sample collected in 1988 from an area adjacent to the shear appeared to be saturated with oil (see Section 2.4).
Observations:	During the VSI, the waste oil sump was partially filled with waste oil. The transfer container was not full. Stained soils and metal shavings were observed on the ground surface around the sump.

SWMU 6	**Former Waste Fuel Storage Tanks**
Unit Description:	This unit included five aboveground metal rail car tanks (see Photograph Nos. 14 and 15) which were located on the ground surface in the railyard area. The tanks each had a capacity of 11,000 gallons. These tanks were located northeast of the shear and north of the welding stations as shown in Figure 2. According to the facility representatives, these tanks were used to store product fuel in the past. Since 1985, these tanks were periodically used to store waste fuel from disassembling locomotives and buses. The tanks were constructed of metal and were sitting on a gravel base above the ground surface.
Date of Startup:	This unit began storing waste fuel on a periodic basis in 1985 (Jenner and Block 1993c).
Date of Closure:	This unit is inactive and the five waste fuel tanks have been disassembled for scrap since the VSI (Jenner and Block 1993c).
Wastes Managed:	According to the facility, this unit managed only nonhazardous waste fuel. The waste was picked up for off-site recycling by Gateway Petroleum of Belleville, Illinois. According to the facility representative, the waste was analyzed by Gateway Petroleum to ensure it was nonhazardous. However, the facility could not provide written verification that this waste was nonhazardous (Jenner and Block 1993c).
Release Controls:	These tanks had no release controls. The tanks were not diked or bermed and were sitting on the gravel-covered ground surface.

History of Documented Releases:	This unit has no history of documented release.
Observations:	According to facility representatives, this SWMU was empty during the VSI. No leaks or cracks were observed on visible portions of the tanks. The ground around the tanks was partially vegetated.
SWMU 7	**Media Float Waste Piles**
Unit Description:	This unit is located outside the media plant on the southwest side of the clarifier (see Photograph Nos. 7 and 8). Media float generated by the media float process is removed the media float unit and from the bottom of the clarifier and stored in a waste pile until disposed in SWMU 2. The waste piles are located on the ground surface and have no clearly demarcated boundaries.
Date of Startup:	This unit began operating in 1975.
Date of Closure:	This unit is active.
Wastes Managed:	According to the facility, this unit manages only nonhazardous waste. The waste has not been analyzed, however, for hazardous constituents.
Release Controls:	The waste piles have no release controls.
History of Documented Releases:	This unit has no history of documented release.
Observations:	During the VSI, a large (20-foot-diameter by 20-foot-high) media float waste pile was observed outside the media plant. This waste had not

	been disposed in the landfill since September 1992. No drains were observed in this area.
SWMU 8	**Shaker Dirt Waste Piles**
Unit Description:	This unit is located adjacent to the railyard shear. In the past, small quantities of shaker dirt have been stored in piles in this area. When possible, the shaker dirt is mixed with scrap iron and sold to the steel mills. If the scrap is too dirty, the shaker dirt is stored until mixed with scrap for sale or disposed in the On-Site Landfill (SWMU 2). The waste piles are located on the ground surface and have no clearly demarcated boundaries.
Date of Startup:	This unit began operating in 1975.
Date of Closure:	This unit is active.
Wastes Managed:	According to the facility, this unit manages only nonhazardous shaker dirt. This waste has not been analyzed, however, for hazardous constituents.
Release Controls:	The waste piles have no release controls.
History of Documented Releases:	This unit has no history of documented release.
Observations:	During the VSI, no distinguishable shaker dirt waste piles were observed. However, scattered shaker dirt (metal shavings) was observed on the ground around the shear. Some oil staining was visible in this area. No drains were observed in this area.

4.0 AREAS OF CONCERN

PRC identified one AOC during the PA/VSI. This AOC is discussed below. Because this AOC includes various areas of stained soil, it is not indicated on Figure 2.

AOC 1 Stained Soil Areas

An October 1988 IEPA inspection noted several areas of visible soil contamination, in addition to auto fluff, distributed across the facility. The following areas of visible contamination were noted: (1) contaminated soil was observed at disassembly areas in the railyard; (2) oil was observed dripping from the railcar shear onto the ground rather than into the Waste Oil Sump (SWMU 5) because dirt and metal shavings obstructed the oil flow to the sump; (3) an area northeast of the wheel press was observed to be saturated with oil; and (4) soil and gravel around product fuel storage tanks were noted to be saturated with oil, apparently due to ongoing spills in this area (IEPA 1988a).

IEPA sampled soils in the above areas. Surface soil samples from between welding station No. 1 and the railroad tracks and from an area behind welding station Nos. 4 and 5 were discolored and metal shavings were present. Samples from (1) the shear area and (2) the disassembly area were saturated with oil. Little soil was available for a sample from the fuel storage tank area (IEPA 1988a). As discussed in Section 2.4, some of these samples contained oil.

Until the early 1980s, the facility discharged clarifier process water onto SWMU 2. This water was sampled by IEPA and determined to contain heavy metals and oil (IEPA 1981). Therefore, it is probable that soil contamination occurred at the former discharge location. This area was not observed during the VSI, because this discharge was not discussed in the PA files. The IEPA memorandum discussing the discharge was provided to PRC by SLAS representatives during the VSI. According to the facility, minor discharges from the clarifier ceased in the early 1980s (Jenner and Block 1993c). Soils at the discharge point were not sampled because the outlet was

on SWMU 2 and SLAS determined that any release would be detected by quarterly groundwater monitoring conducted for SWMU 2 (Jenner and Block 1993d).

During the VSI, portions of the facility property were wet from recent rains and soil staining was somewhat difficult to discern. However, soil staining was observed around the railcar shear (at SWMU 5), the shredder, and the product fuel storage tanks near the main office.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified eight SWMUs and one AOC at the SLAS facility. Background information on the facility's location; operations; waste generating processes and waste management practices; history of documented releases; regulatory history; environmental setting; and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. The AOC is discussed in Section 4.0. Following are PRC's conclusions and recommendations for each SWMU and AOC. Table 3, located at the end of this section, summarizes the SWMUs and AOC at the facility and the recommended further actions.

SWMU 1	**Shredder Cyclones**
SWMU 2	**On-Site Landfill**
SWMU 3	**Auto Fluff Waste Piles**
SWMU 7	**Media Float Waste Piles**
SWMU 8	**Shaker Dirt Waste Piles**

Conclusions: These units generally do not have secondary containment. The bins associated with SWMU 1 and SWMUs 3, 7, and 8 are at least partially situated on the ground surface. SWMU 2 is unlined.

SLAS maintains that isolated waste samples could contain lead, cadmium, PCBs, or oil but that facility waste is nonhazardous. IEPA maintains that (1) auto fluff in SWMU 2 is hazardous under RCRA for lead (D008) and (2) auto fluff in SWMU 3 may be subject to TSCA regulation (see Sections 2.3 and 2.5). A 1991 EPA pilot study indicated that U.S. shredder waste may commonly contain low levels of PCBs, lead, and cadmium (EPA 1991).

Because wastes in the above-listed SLAS SWMUs have not been well-characterized, it is difficult to determine (1) the potential for release of hazardous constituents to environmental media or (2) whether secondary containment or further investigations should be provided for each unit. A recent IEPA review of groundwater monitoring data indicate that groundwater at the facility has been significantly impacted and that SWMU 2 may be

releasing hazardous constituents to groundwater (see Section 2.4). However, only four groundwater monitoring wells are located on site for groundwater monitoring and limited parameters are measured.

Recommendations: PRC recommends that auto fluff, media float, and shaker dirt be analyzed (particularly for lead, cadmium, PCBs, VOCs, and oil) to determine the potential for release of hazardous constituents posed by SWMUs 1, 2, 3, 7, and 8. Based on sampling results, the waste should be characterized as hazardous under RCRA, TSCA-regulated, or nonhazardous. Groundwater data should be reviewed and additional sampling should be conducted as necessary to determine if SWMU 2 has released hazardous constituents to groundwater.

Based on sampling data, the potential for release to air, surface water, groundwater, and on-site soils should be determined for each SWMU. Further investigations may be warranted for SWMUs where a high release potential is determined to exist. Secondary containment may also be required for such SWMUs.

SWMU 4 **Waste Oil Storage Area**

Conclusions: This unit consists of an aboveground metal tank on a concrete base. The unit manages nonhazardous waste oil. The unit poses a low potential for release to air, groundwater or surface water because the unit is an aboveground tank in good condition, located on a concrete base which is also in good condition, is generally closed, and has no surface water bodies or drains located in its vicinity. The unit poses a moderate potential for release to on-site soils because it is unbermed.

Recommendations: PRC recommends that SLAS provide secondary containment (a berm) for the SWMU to prevent a release if a spill or leak occurs at the tank.

SWMU 5 **Waste Oil Sump**

Conclusions: This unit poses a low potential for release to air. The unit manages waste in a covered sump and a closed metal container. The unit has documented releases to on-site soils. Soil staining was observed in this area during the VSI. The unit is not bermed, but is not located near surface water bodies and poses a low potential for release to surface water. The integrity of the sump could not be observed because it contained water and oil during the VSI. Therefore, the potential for release to groundwater from the sump could not be determined.

Recommendations: PRC recommends that SLAS determine the integrity of the sump. PRC also recommends that any visibly stained soils in this area removed and properly disposed. To prevent further releases, this SWMU should be provided with a sound impervious base and berm.

SWMU 6 **Former Waste Fuel Storage Tanks**

Conclusions: This unit poses a low potential for release to soils, air, surface water, and groundwater. The tanks were metal and appeared to be in sound condition during the VSI. Since the VSI, the tanks have been disassembled for scrap.

Recommendations: PRC recommends no further action for this SWMU.

AOC 1 **Stained Soil Areas**

Conclusions: Stained soils have been observed in the past and were observed during the VSI around oil and fuel storage and transfer areas (for example, the railcar shear and oil sump, the shredder, and product fuel storage tanks).

Recommendations: PRC recommends that Stained Soil Areas be identified, characterized, and properly disposed. Particularly, SLAS should identify, inspect and sample any stained soils at the former clarifier process water discharge. Secondary containment should be provided for all units managing liquid waste oil or fuel to prevent further releases to on-site soils.

TABLE 3

SWMU AND AOC SUMMARY

SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
1. Shredder Cyclones	1975 to Present	None	PRC recommends that SLAS characterize auto fluff, determine the potential for release of hazardous constituents from this unit, and take appropriate preventive or corrective actions.
2. On-Site Landfill	1976 to Present	A recent IEPA review of groundwater monitoring data indicates that this SWMU may be impacting facility groundwater (IEPA 1993c).	PRC recommends that SLAS characterize auto fluff, media float, and shaker dirt, determine the potential for release of hazardous constituents from this unit, and take appropriate preventive or corrective actions. SLAS should also review groundwater data or collect additional data, if necessary, to determine if this unit has released hazardous constituents to groundwater and whether corrective action should be taken.
3. Auto Fluff Waste Piles	1975 to Present	Auto fluff has been observed blowing off-site in past.	PRC recommends that SLAS characterize auto fluff, determine the potential for release of hazardous constituents from this unit, and take appropriate preventive or corrective actions.
4. Waste Oil Storage Area	1975 to Present	None	PRC recommends that SLAS provide secondary containment, such as a berm to prevent a release in case of a spill or tank leak.
5. Waste Oil Sump	1977 to Present	Observed soil staining around the sump.	PRC recommends that SLAS provide secondary containment, including a concrete pad and berm to further releases to soil. The sump should be inspected to determine its integrity.

TABLE 3 (Continued)

SWMU AND AOC SUMMARY

SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
6. Former Waste Fuel Storage Tanks	1985 to Present	None	PRC recommends no further action at this time.
7. Media Float Waste Piles	1975 to Present	None	PRC recommends that SLAS characterize media float, determine the potential for release of hazardous constituents to environmental media from this unit, and take appropriate preventive or corrective actions.
8. Shaker Dirt Waste Piles	1975 to Present	Stained soils observed on ground surface.	PRC recommends that SLAS characterize shaker dirt, determine the potential for release of hazardous constituents to environmental media from this unit, and take appropriate preventive or corrective actions. PRC also recommends that SLAS remove any stained soils and dispose of them properly.

AOC	Dates of Operation	Evidence of Release	Recommended Further Action
1. Stained Soil Areas	Unknown	Stained soils have been observed around fuel and oil storage areas (product fuel storage tanks, the shear, and the shredder).	SLAS should identify, characterize and properly dispose of contaminated soil, including potential soil contamination at the former clarifier process water discharge location. SLAS should provide secondary containment for fuel and oil storage units to prevent further releases.

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APPENDIX A

VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

(12 Pages)

VISUAL SITE INSPECTION SUMMARY

St. Louis Auto Shredding, Inc.
1200 N. First Street
National City, Illinois 62071
ILD 984 767 392

Date:	September 21, 1993
Primary Facility Representative:	Ed Karkut, Plant Manger
Representative Telephone No.:	(618) 271-7100
Additional Facility Representatives:	Ray Reott, Jenner and Block, Attorney
Inspection Team:	Carla Buriks, PRC Environmental Management, Inc. (PRC) Michael Keefe, PRC
Photographer:	Carla Buriks
Weather Conditions:	Sunny and hot, 80°F
Summary of Activities:	The visual site inspection (VSI) began at 10:00 a.m. with an introductory meeting. The inspection team explained the purpose of the VSI and the agenda for the visit. Facility representatives then discussed the facility's past and current operations, solid wastes generated, and release history. Facility representatives provided the inspection team with copies of requested documents. The VSI tour began at 11:15 a.m. The inspection team left the office and proceeded past the weigh station to the shredder. A large pile of automobiles and appliances was located before the shredder. The team observed the Shredder Cyclones (SWMU 1) and the Auto Fluff Waste Piles (SWMU 3). The generators, the bailer, and the product fuel storage tanks were also observed. Stained soils (AOC 1) were observed around the two product storage tanks (one for on-road and one for on-site vehicles) near the office. The team next inspected the media plant including the media float unit which includes the pump house and clarifier to recycle media float unit water. Inside the media plant PRC observed several batteries waiting to be taken off-site. The team next inspected scrap metal waiting for resale and the Media Float Waste Piles (SWMU 7). The team also inspected the Waste Oil Storage Area (SWMU 4).

Summary of Activities (Continued):

The team next inspected railyard operations. The team observed welding stations, the railcar shear, the Waste Oil Sump (SWMU 5), the Former Waste Fuel Storage Tanks (SWMU 6), and the Shaker Dirt Waste Piles (SWMU 8).

The team next inspected the On-Site Landfill (SWMU 2). The landfill was inactive at the time of the VSI and had a locked gate.

The tour concluded at 1:30 p.m., after which the inspection team held an exit meeting with facility representatives. The VSI was completed and the inspection team left the facility at 2:00 p.m.

Photograph No. 1 Location: SWMU 1
Orientation: Northeast Date: 09/21/93
Description: View of first shredder cyclone which separates auto fluff on the ferrous separation side of the shredder.

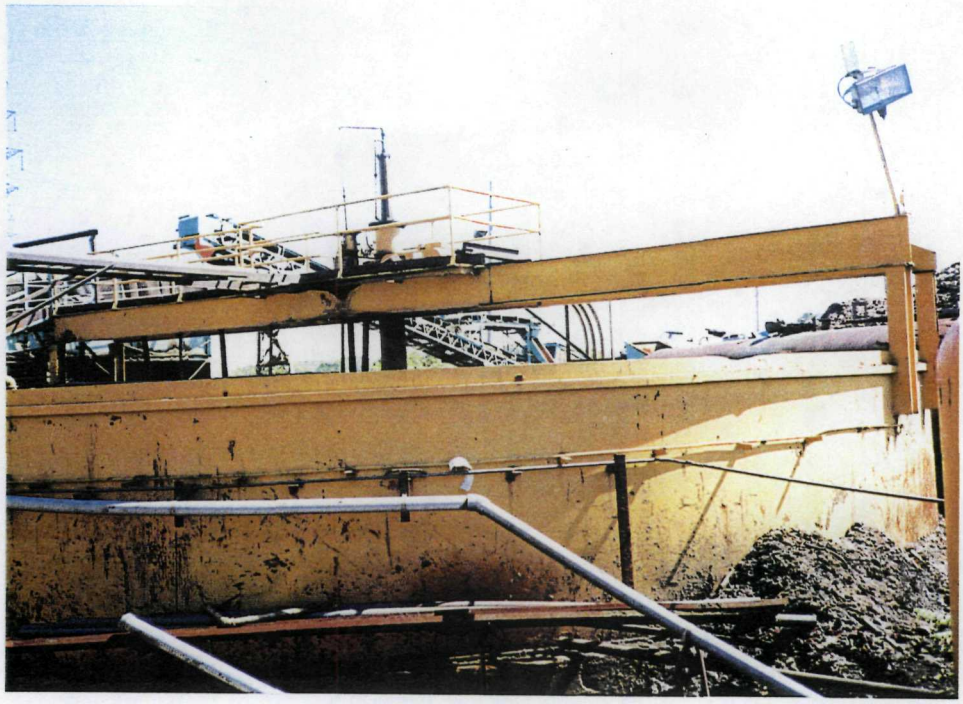
Photograph No. 2 Location: SWMU 1
Orientation: Northeast Date: 09/21/93
Description: View of second cyclone which separates auto fluff on the ferrous separation side of the shredder. Concrete barrier in background is part of the collection bin for auto fluff.

Photograph No. 3 Location: SWMU 3
Orientation: Southeast Date: 09/21/93
Description: View of Auto Fluff Waste Piles (background) and recovered scrap piles (by trucks and in foreground).

Photograph No. 4 Location: SWMU 3
Orientation: East Date: 09/21/93
Description: View of Auto Fluff Waste Piles near the shredder. Pooled water near scrap is from heavy rains.

Photograph No. 5 Location: SWMU 3
Orientation: North Date: 09/21/93
Description: View of Auto Fluff Waste Piles to right of concrete retainer wall. Third cyclone is visible on left. The concrete retaining wall is part of the collection bin for auto fluff from the nonferrous separation area. Waste was standing in pooled water from recent rains.

Photograph No. 6 Location: Not applicable
Orientation: Northeast Date: 09/21/93
Description: View of scrap recovered metal (background) in the media plant. Cardboard boxes contain scrap batteries waiting for sale.

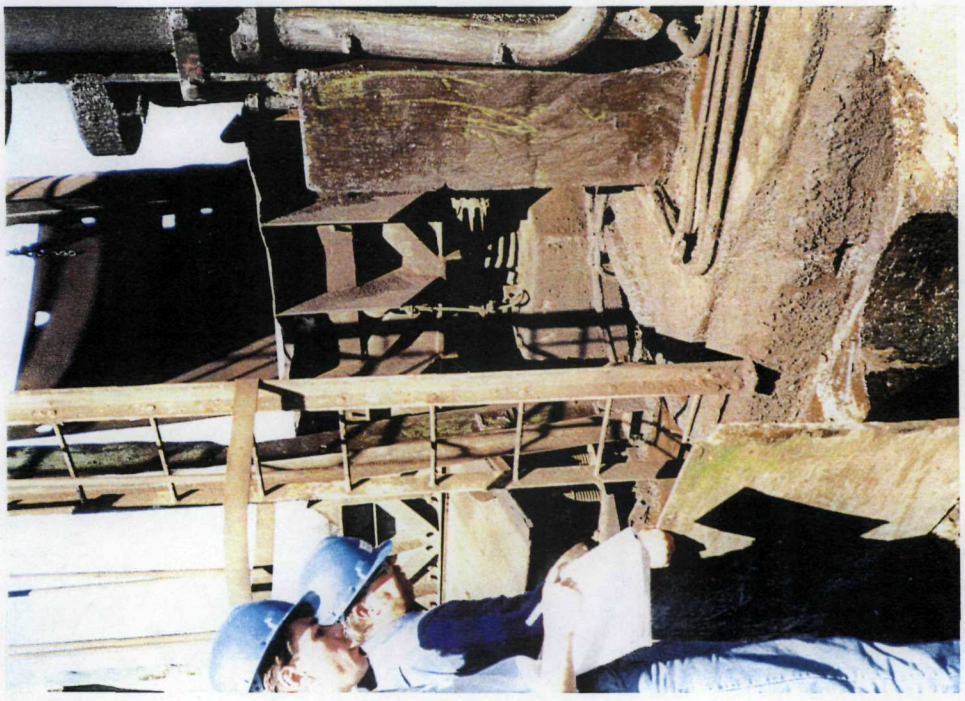


Photograph No. 7 Location: SWMU 7
Orientation: East Date: 09/21/93
Description: View of clarifier associated with media plant process. Collected media float, part of Media Float Waste Piles (SWMU 7) in right bottom hand corner.

Photograph No. 8 Location: SWMU 7
Orientation: North Date: 09/21/93
Description: View of media float pile outside media plant. Part of waste pile is in standing water from recent rains.

Photograph No. 9 Location: SWMU 1
Orientation: North Date: 09/21/93
Description: View of the collection bin for auto fluff from the third shredder at the nonferrous separation side of the shredder.

Photograph No. 10 Location: SWMU 5
Orientation: Northeast Date: 09/21/93
Description: View of in-ground sump adjacent to shear. The sump is part of SWMU 5.

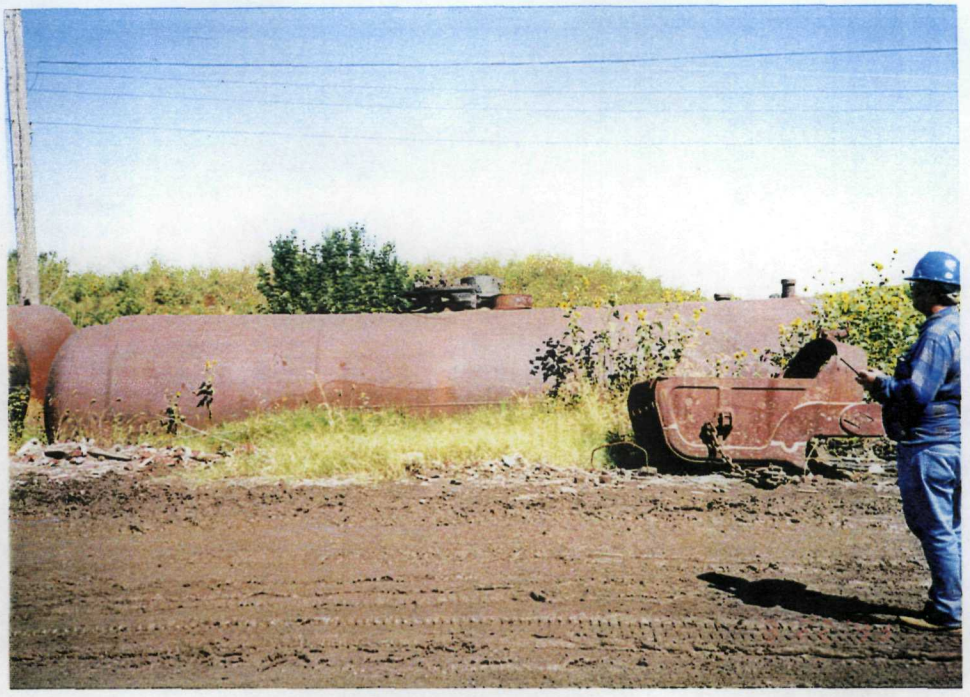


Photograph No. 11 Location: SWMU 5
Orientation: North Date: 09/21/93
Description: View of sump adjacent to shear (second view). Wooden board to cover sump is pictured.

Photograph No. 12 Location: SWMU 5
Orientation: Northeast Date: 09/21/93
Description: View of metal transfer container used to transfer oil from sump to SWMU 4. Container is also a part of SWMU 5.

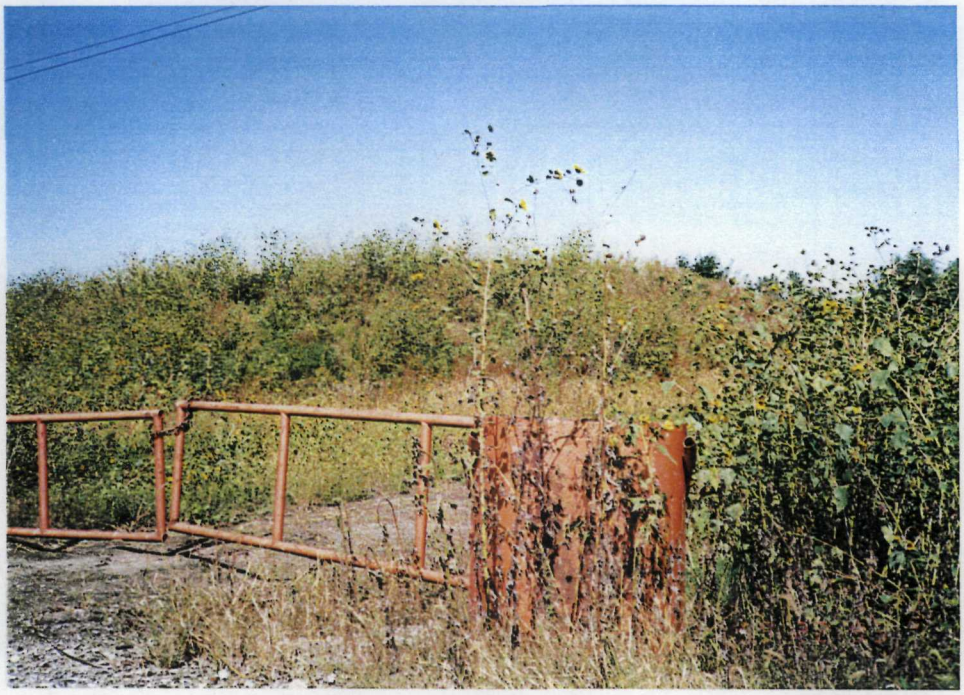
Photograph No. 13 Location: SWMU 5
Orientation: North Date: 09/21/93
Description: View of metal transfer container used to transfer oil from sump to SWMU 4. Container is also a part of SWMU 5.

Photograph No. 14 Location: SWMU 6
Orientation: Northeast Date: 09/21/93
Description: View of Former Waste Fuel Storage Tanks used to store spent fuel collected from equipment disassembly in the railyard. These tanks were scrapped in 1993.



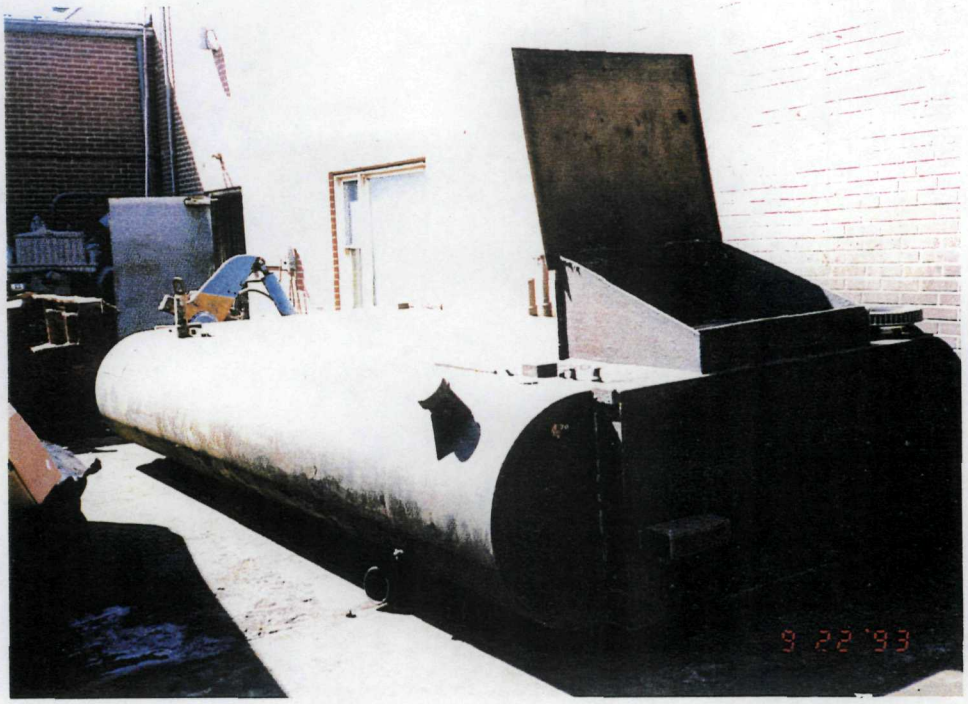
Photograph No. 15 Location: SWMU 6
Orientation: North Date: 09/21/93
Description: Second view of Former Waste Fuel Storage Tanks used to store spent fuel collected from equipment disassembly in the railyard. These tanks were scrapped in 1993.

Photograph No. 16 Location: SWMU 2
Orientation: Northeast Date: 09/21/93
Description: View of On-Site Landfill (SWMU 2), the northeast portion previously filled.



Photograph No. 17 Location: SWMU 2
Orientation: Northeast Date: 09/21/93
Description: Second view of On-Site Landfill showing locked gate at entrance to landfill.

Photograph No. 18 Location: SWMU 4
Orientation: Southwest Date: 09/21/93
Description: View of Waste Oil Storage Area locomotive tank (open top) used for waste oil storage.



Photograph No. 19 Location: SWMU 4
Orientation: Southwest Date: 09/21/93
Description: Side view of Waste Oil Storage Area locomotive tank (open top) used for waste oil storage.

APPENDIX B

VISUAL SITE INSPECTION FIELD NOTES

(26 Pages)

9/21/93

St. Louis Auto Shredder PA/VSI

10:00 am, Sunny, no clouds, high 60's

Ed Karkut

Ray Reott

1988 AERIAL

Began operations in 1975

Whole autos (no tires, batteries, gas tanks - from auto wrecking yard

Inspection station to check if parts removed

Incentive program $25 if they find a battery, then $50 free to customer

~ 400 tons/day of auto + appliances (stoves, refridgerators, water heaters)

↳ inspectors check that compressor is removed.

1 shredder - loaded by a crane - a hammermill

↓

6"x8" grates

↓

shaker table (moves it down to)

↓

magnet drums ← (remove ferrous scrap →)

↓

50% metal
50% shredder fluff

{ Non ferrous metal and other
to a conveyor, takes it to a bin

to a pile → media plant where Al is separated from die cast
a recovery process for non ferrous

1,000-1500 tons

MJK

.. Run the media plant 1x/year
.. Separation by differences in fluid densities - float off dof materials
.. Al from die cast separated by machine
.. Brass, Cu, stainless steel is hand picked

.. Water spray on top of hood box - spray to keep mill cool
.. Most spray turns to steam / evaporates from heat
.. Spray is ?

..

.. Water is used in media plant - storage tank
.. This water is recycled
.. Skimmers are on the storage tank
.. clarifier (above ground) - separate from storage tank

.. Media plant Al shaked off, leavy die cast separated - sold
.. shredder fluff is piled then moved to the land fill

..

.. 400 tons/day 20% by weight is fluff, though this could be an old estimate
.. ~~_____~~ b/c cars now have more plastic

.. 3 cyclones : 2 for ferrous metal
.. 1 for non ferrous
.. collects light particles (fluff)

] Material from is mixed with autofluff to land fill

.. Cyclones have been onsite from the start.
.. A conveyor takes ferrous scrap to a pile - which is loaded by
.. truck or rail to customers - This is the finished product 8,000 ton/month
.. shipping depends on metal prices
1,000 - 1500 tons/day shredder today

Al, diecast, Cu, brass are sold back to smelters

Gas tanks could cause explosion

Baler operation (3 employees)
makes blocks of metal scrap
Incoming steel scrap - stamping scrap, coil
A machine compresses steel scrap into square bales
~1,000 - 1500 ton/month, Ed has records of this
No waste as there is with the shredder

Employment fluctuates with operation of media plant (hand pickers) ~18 workers

AIR PERMITS : 3 : generators, shredders, and an old furnace
Not used - formerly used to burn train armature to get copper. (from electric motors)

Haven't cut locomotives in years

Access control - either fenced or box cars
guard service during off hours

Copper is locked up

Waste oil is from facility equipment maintenance. Waste oil storage tank 3000 - 4000 gallon tank; formerly used drums
aboveground steel tank
Gateway Petroleum picks up the waste oil (NON HAZARDOUS)
located in St. Louis, a recycler.

MJK

- Diesel fuel storage tanks for fuel for cranes
  - 2 near office
  - 2 near generator
- Motor oil storage tank for equipment
- Old fuel storage tanks are no longer used (used during fuel shortages in the early 1950s)
- Never any underground storage tanks

Rail yard operation

- No. 2 oil shipped in August from Rail yard operations / one time
  - from Locomotives that were cut in the past

- Railroad cars (box, hopper, gondola). These are cut into smaller pieces by hand with torches. Smaller pieces are taken to a shear where they are cut into smaller pieces
  - 5" x 18"W is output from shear (or smaller)
    - maximum output
- Shaker dust - magnetic, looks like dust - thrown in with shredder
  - output to steel mill
- generation rate is unknown. "not much"

- Heavy iron is processed in shear mill also, not just rail cars

- 100 to 150 tons per day into ~~shredder~~ shear mill, not counting rail cars
  - variable

MMC

1987 was the last engines were cut up that generated oil.

No 2 oil sent out in August 93 contained oil from 1987, also oil from bus engines or diesel fuel (No. 2 oil = diesel fuel now)
Last bus was in Feb 92

Some parts a landfill that were dug as trenches
82/83 area filling began
1982 state suggest area filling
Industrial landfill R887 requirements. Illinois docket No. - new design must meet these rules
No design rule originally - maybe that you had to leave 2' of clay below the trench - but no personal knowledge of the practice as such.
Area filling - big mound going up but modification goes down w/ liners
Now, daily cover with earth
Argument was 30 days in case you wanted to recover the fluff there wouldn't be so much dirt
Media plant from 1975
* 125,000 cars/year shredded

Fluff - national issue or regulatory states

↳ material is not homogeneous
also difficult to analyze
} ∴ having repetative results is "impossible"

State took samples for landfill in 1988, high of lead
May 1993 State took 15 fluff samples that passed for PS but had a PCB problem, but facility splits did not have PCB ∴ SCAS question Lab QA
This shouldn't be different for any other shredder fluff nationally, so no movement until EPA decides

Not mixed with municipal garbage, it is "monofill"
Method 12 synthetic rainfall test - no leachate contaminants
TCLP applies if it was mixed with municipal waste

As a result IEPA said it is not a RCRA waste
IEPA has no TSCA authority
EPA would shut shredders down if they called it hazwaste
EPA study was 4/5 years - Report came out in 90/91
blind sampling program
Battery = Pb spike] Battery inspection program] Real fear
If a battery is found it is returned to the customer.

PCBs - ? from electrical parts of old appliances - motors and capacitors.

MJK

No regular sampling done by SLAS
≈ 200 shredders nationally → Reg. - not sure about this.

Water discharge

No NPDES permit but Institute of Scrap Recycling (ISRI) Industries, Inc.

* [Subsumed a group NPDES stormwater permit - not issued yet for shredders

[No other waters discharged except sanitary
City water
GW monitoring wells on-site for the landfill.
quarterly sampling.... for over 15 years.
Andrews Engineering is the consultant. File quarterly reports w/ STATE
Regional groundwater is not good. but nothing attributed to landfill

Ash Pond berms/levees inside 100 year flood plain
with ↑ it is outside

Jen Liss [File quarterly reports will go to landfill permit people
Chris Liedman @ EPA?
Spring field EPA in land division should know.

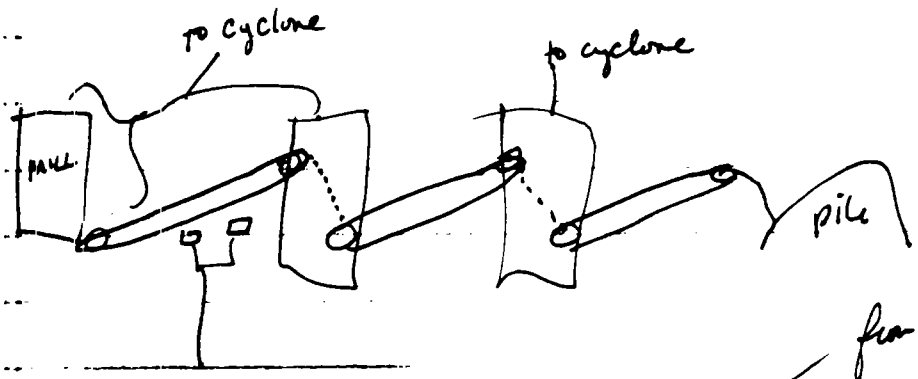
MJK

History of land before SLAS is unknown, but it was not developed.

Diesel fuel storage tanks
2 rail tanks side by side ~ 8,000 gal each
A, B B = off road
| 30000 CAP, A = highway use
8000 CAP

Generators are used a backup power for shredder/baler
Ray doesn't know whether Generators have PCB capacitors
4 generators 2 above ground at tanks for generators

The shredder (mill) and conveyor system is exhausted to cyclone



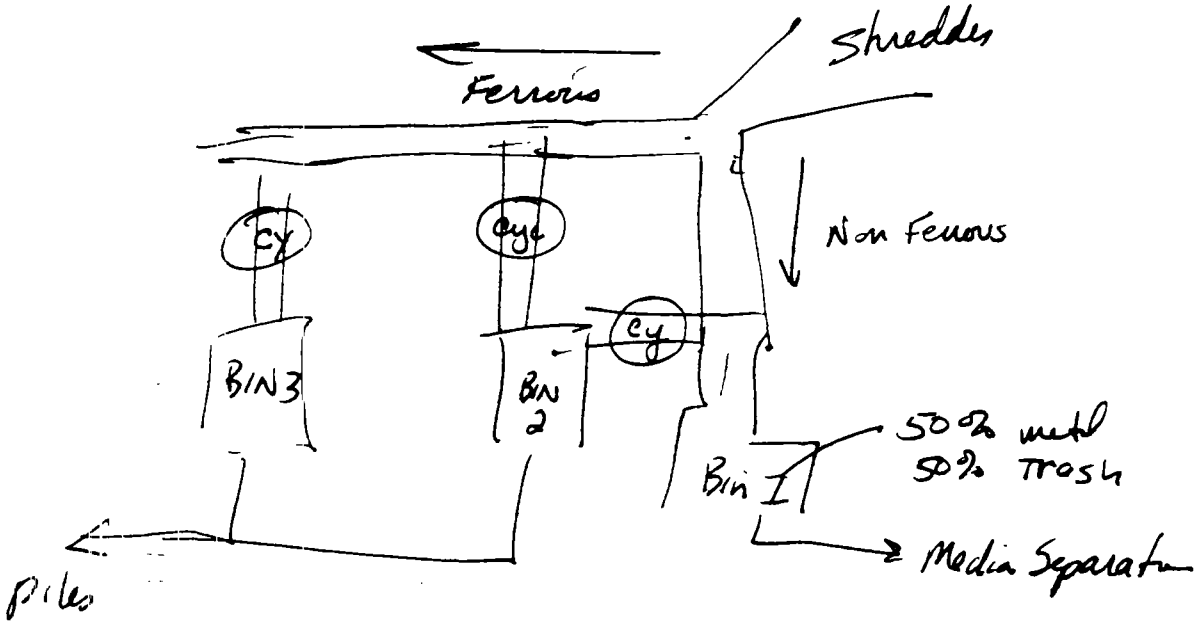
2 people in booth removing Cu from stream b/c ↓ quality of steel

Shredder fluff is temporarily piled until land fill is permitted

No 1 bin Shredder Residue → Media Plant → recyclable

in 2, 3 - Auto Fluff piles ←

mjf



Rlb of die cast
Rlb of stainless - hand picked from line
Cu, Brass hand picked

FLUFF → floats

Media Separator Al / Die cast dust difference

after Al / Die Cast are separated
Cycle material Through, 3 times

Separator - runs 5 days/week
2 to 3 months / year.

A chemical is added to entrance separator
KEOKUK
FERRO-SIL, INC.

MJK

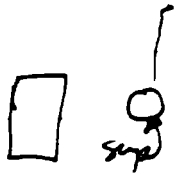
Boxes of batteries on pallets in the media bldg - generated from facility equipment and buses - will be shipped off site

10 boxes on pallets
boxes are about 4 x 4 x 4
a "few years" they been there

Solids from clarifier goes into fluff waste stream

Oil sump on shearing machine — 6 steps x 4 wide x 4 high
pumped into square tank near sump

Scummy water near base of shaker



covered

5 steel tank in carlyard ~ 11,000 gal each

at No. 2 fuel bus

Road

resting directly on the ground

used to be rail tanks 3/4" to 1" thick

mjk

landfill – 4 active areas

Pictured area fill – covered w/ dirt and seeded w/ a "pasture mix"

Problems w/ people fishing in water nearby

Ray thinks SLAS will break ground in spring '94

80 acres permitted for landfill

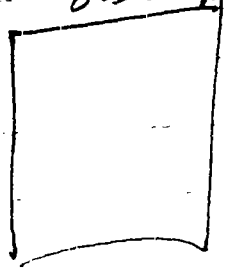
~~40~~ footprint of area fill ~ 20 acres

~~12~~ old monitoring wells – sampled ~~quarterly~~
+ new wells put in to get new permit

An operating section – no runoff control, leach, etc. alot of ponding

waste oil tank ~ 4,000 gallons, no 2° containment on concrete pavement

8.5 steps



16 steps

hip high

from locomotive

Sheen was installed in 1977

"Don't add much makeup water"

clarifier pump room + tanks in place since the beginning before 1978)

B&O, runs the separator

mjk

Bob Geroff

- 2 water holding tanks - 5k each
- clarifiers 150,000 gallons/water
- pump house floor 3.5' deep 25' long x 12' wide
- foam from tops
- mud from bottom of clarifiers

} → added back to effluent

20.5 for sewer

St. Louis Auto Shredding VSI 9/21/93
Ray Reoth Carla Burilks
Ed Karkut Michael Keefe

Bailer -- building for pumps. — past 1988 other 1990
buildings all on map.

Operations began

Facility operations
Outside customers -- bring in cars [scale pay per ton
They crush cars & bring them in.
They accept cars & inspector makes sure gas
tanks are gone & batteries are gone.
Employees find a battery -- get $25.
fine ~~employee~~ customer. $50

400 ton/day automobiles & appliances
stoves, refridgerators, hot water heaters
inspectors watch refridgerators & remove
compressors.

One shredder unit -- beats car to death.
hammermill about 1 min to grind up a car.
grates 6"x8" opening onto a shaker table
travels on a conveyor (stryker) to magnet drums
if heavy steel gets in there they shut shredder
pick up ferrous scrap. -- shakes to conveyor
nonferrous metal + part of shredder fluff up conveyor

2 of 5

takes it to bin to media plant. 50% metal & about 50% shredder fluff. Pile up til it gets to about 1000 to 1500 tons media plant Run 3 or 4 months a year.

Media plant cleans rest of metal separates Al from die cast -- recovery process for non ferrous silica fluid densities -- float off fluff materials. Recover Al brass stainless hand-picked off conveyor. ↑ copper coins ↑ hand picked

Water -- float off fluff -- storage tank.

Shredder -- water spray ← most of water evaporates no idea flow through there.

Recycle water through the plant -- no discharge to sewer. They have skimmers on tanks

above ground Clarifier to help remove solids from water not enough oil to drum up.

Al. floats off in media plant.

Die cast is left -- put in separate pile --

The die cast is piled right next to the office

Shredder is piled & then goes to landfill.

700 tons/day in ——— 20% of weight is fluff. -- over time more plastic used.

Three cyclones are on the shredder

2 big for ferrous & 1 small for non ferrous.

cyclone collection materials to shredder fluff.

C/B

Cyclones -- installed 1975 -- They've been there since plant began operating.
→ Air permits --
ferrous scrap. — piled -- out on rail cars / trucks barges
~~Separate operation~~ right now 1500 ton/day stock piled
→ Al brass copper
→ secondary Al smelters
Die cast -- sold to die cast smelters
→ Coins — employees supposed to put in collection area.
→ If gas tank is in there -- causes a small explosion
.. happens infrequently

→ Bales operation -- generates blocks -- shelter houses & stamping -- all steel
.. comes in by truck and they bail it here.
3 employees .. 1990 or so --
.. Records 1000 - 1500 tons/month. about.
.. ~~Buy per ton & sell per ton.~~
.. No waste all steel.
Employees each department —
→ Media plant -- right next to office
Shred ① generators
② shredders
③ furnace → still here not used. -- at one time cut up a lot of locomotives burning aromatene to clean copper - rail car.

2/3

Locomotives -- part of rail department.
furnace was.

Facility access controlled by fence & box cars.
5 p.m - 6 a.m -- guard service.

- Copper is kept locked up.
- die cast doesn't seem to disapear

→ Maintenance -- waste oil.
waste oil 3-4000 gallon tank. --
waste oil steel above ground tank
→ generate waste oil: Gateway Petroleum (Recycling
Belleville IL or ~~St Louis, MO.~~
→ nonhazardous waste oil -- they analyze it
liscenced.

→ diesel fuel -- storage tanks road trucks on & off
road trucks — 2 are up by office 3 aboveground
2 in back by generators

→ Waste Oil. -- net =N= net pounds
- No. 2 oil locomotive $.10/gal →
Tanks used to keep good fuel in then kept
locomotive waste oil come from locomotives they
had cut up years ago.

C/K

Rail car operations

hopper cars, gondolas, etc.
burning field – cut by hand torches
Shear cuts into smaller pieces.

hopper → 8 or 10 pieces by hand → shear.
~~15 to 20 long by 18" wide~~ pieces or smaller.
Industrial scrap pipe/cracks cut in 5' piece
but not as wide
→ Shear → compacts it to log that shears it every
18 inches to shaker table to conveyor belt.
shaker dirt -- magnetic steel → collect it +
send it out with shredder steel →
shaker dirt bits of metal generated by shearing
generation depends on -- not a lot though.
Rail car active -- cut other steel too + shear it
real heavy metal they cut with torches.

Varies but rail car area 100-150 tons/day.
~~very few~~ rail cars cut up.
→ waste →
any oil from the locomotive goes to former product
fuel tanks.
1987 -- some buses + locomotive -- fuels.
engines ~~gas~~ → ~~diesel fuel~~ → diesel fuel.
No. 2 oil $.10/gallon. →
last fall did some buses. but.

CJR

→ Shear -- only rail car operation.
- waste oil storage tank.
- landfill
→ Landfill ←

1975 - 1982 -
Trenches —
1982 → area filling
industrial landfill
Modification in now -- "expansion" but really
just to make sure w. new area mets new
really.
Trenches -- no design rules + clay below trench 2' clay.
1982 → Area filling -- at states requests
→ Big mounds -- waste pilling sounds like.
Daily cover → earth. ----
1983 asked for 30 days cover →
Company has looked at recovering fluff but nothing
has been
Media plant — not every shredder has one.

Carlo J Bonilla

CJB

7
SLAS

Regulatory status --
nationally issue about fluff.
USEPA -- conducted a study of it. Material is non homogenous -- diff. to sample &
Most of sampling $ for labs
1988 landfill samples.
1993 samples from waste piles --
passed for land & state concluded its non-hzg. waste. facility splits no PCB problem.
State couldn't get its data to replicate.
→ Regulatory status is up in the air
Don't mix it with municipal garbage here.
Shredder fluff. -- "monofill - only / waste"
→ IEPA has no jurisdiction on TSCA. -- If you make it TSCA.
→ No one is taking action. — Study 4 or 5 years ago.
EPA Executive reference it. — 90-91 EPA report.
→ Did a blind sampling.

Lead spikes -- from batteries
PCBs - ~~2~~ some electrical parts in cars old appliances
batteries - go back to customer.

Not on any regular sampling program here.
Don't conduct waste sampling.

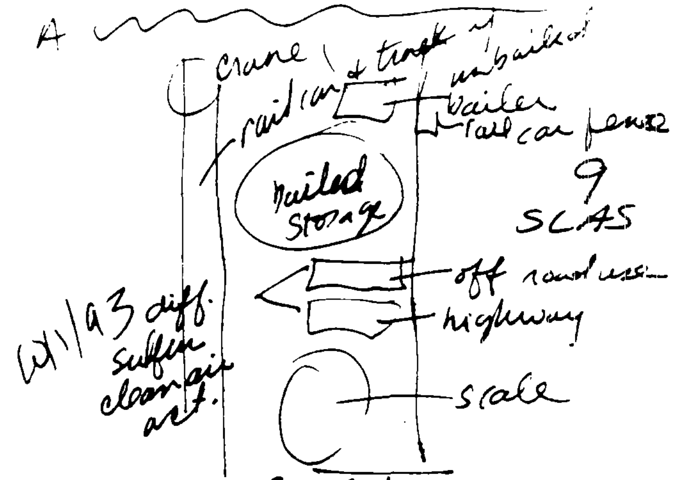
CJB

8
SCAS

Groundwater

Surface water -- Trade association Institute SRI.
Scrap Recycling Industries, Inc.
- Submitted a 1992 --
USEPA deadline to issue 1992.
issue a general permit → then they'll
GROUNDWATER WELLS
- groundwater wells only for monitoring --
Monitoring wells. ←
sampled quarterly since for over 15 years. ←
Andrews -- file quarterly reports.
Regional surface & groundwater --
attributed it to landfill. ←
- Without berms you are outside 100 year floodplain
Berm put up as part of levee system.
groundwater →
Landfill permits
monitoring wells -- don't know how many.
quite a few.

Carla J Burris



Walthrough.

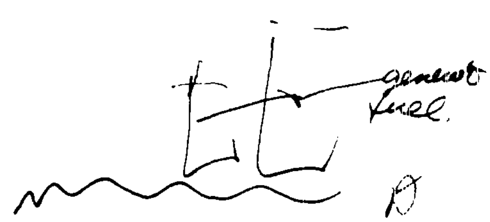
→ Face North w. to road.

Trucks come in & they get weighed. Lonhaven
Hunter Packing

Product fuel storage -- 2 aboveground rail tanks
8,000 gallon tanks for road trucks/cranes/
other equipment
gravity fed.
gravel base -- with railroad ties + gravel.
area has fuel stains around it.

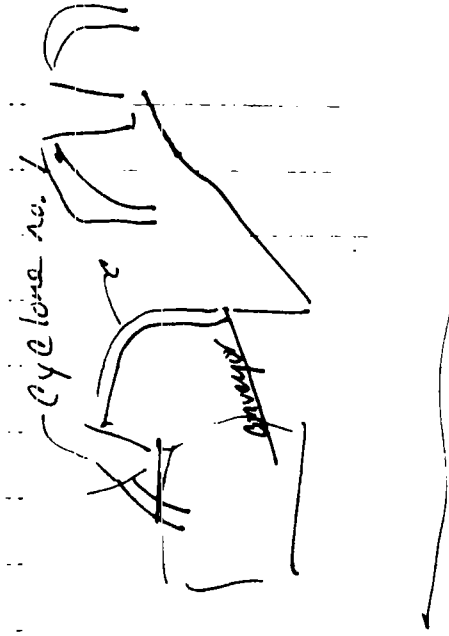
Ground is wet.

Generators. installed 1986
4 only run 3 at a time.
Run them when power co. calls
& tells them. of. no power.
No idea -- year/PCB in generator.
1250 KW/generator. 248 Amps.
Sump in generator area. -- for
collector. Pump it to waste oil storage.

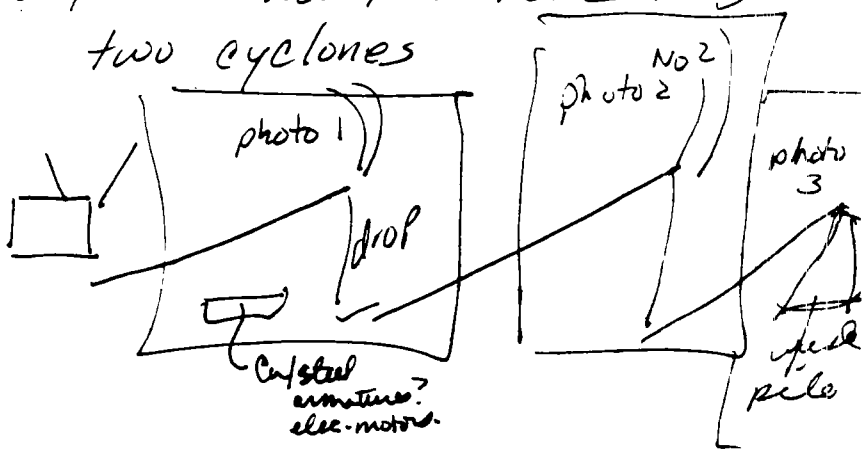


[signature]

generators — 10
SLATS



12:15 Photo no. 1 & no. 2 & 3
two cyclones



Pick electric motors rejects steel to keep Cu content if they don't do it by hand the Cu will be picked up by magnet cuz the steel is still on it & their

At time of VSI 2 large ~~steel~~ waste piles -- actually this is product No. 3. ① steel
Ready to go to steel mills ② fluff.

Photo No 4 in behind me to right 12:20
Waste pile auto fluff.
typically hold a month. & go over to landfill haul.

Waste pile "residue" to media plant nonferrous

Photo No. 5 cyclone no. 3 waste pile hold to media float
No 1 bin residue
No. 2 2 & No. 3 fluff bin

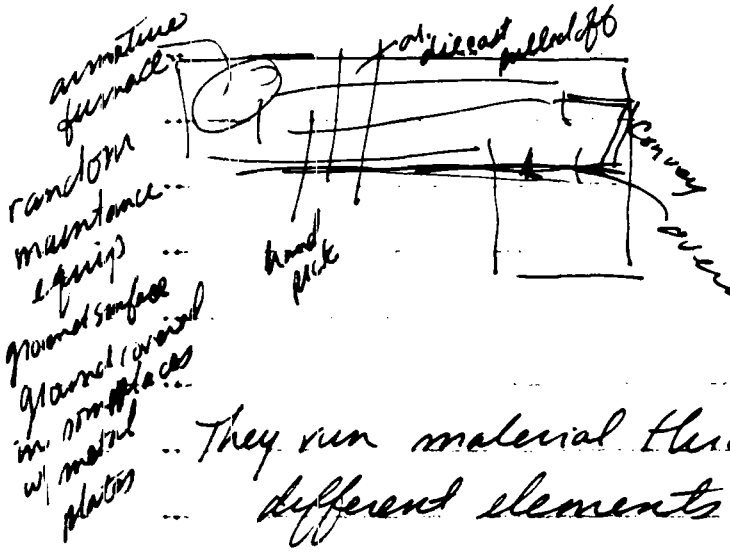
Photo No. 6. — cyclone no. 3 for media plant material
Camera not working.

did not develop CJB 11/15/93

CJB

Property line = back wall of fluff pile = rail cars
New Rose of Film
Die cast outside media plant & stainless
2 waste piles Piles
hand pick.

Media Plant -- not in operation at time of VSI



They run material through 3 times to recover different elements 18 people 5 days/week
maintenance on Saturday 2-3 month.

furnace 1987 1988 - armature
furnace - -
has an air permit too -- if ever went back to doing armatures.
one tipped over drum of ferro silora, - -

boxes of batteries -- 7 boxes of batteries
facilities equipment & buses. — how long stored here -- on wooden crates — dont generate enough to ship very
They sell these wrapped in plastic/cardboard box

→ against wall shredded copper $.40-.50/lb.
against wall in front of copper batteries
oll No. 2 Photo no. 1 new roll batteries & copper.

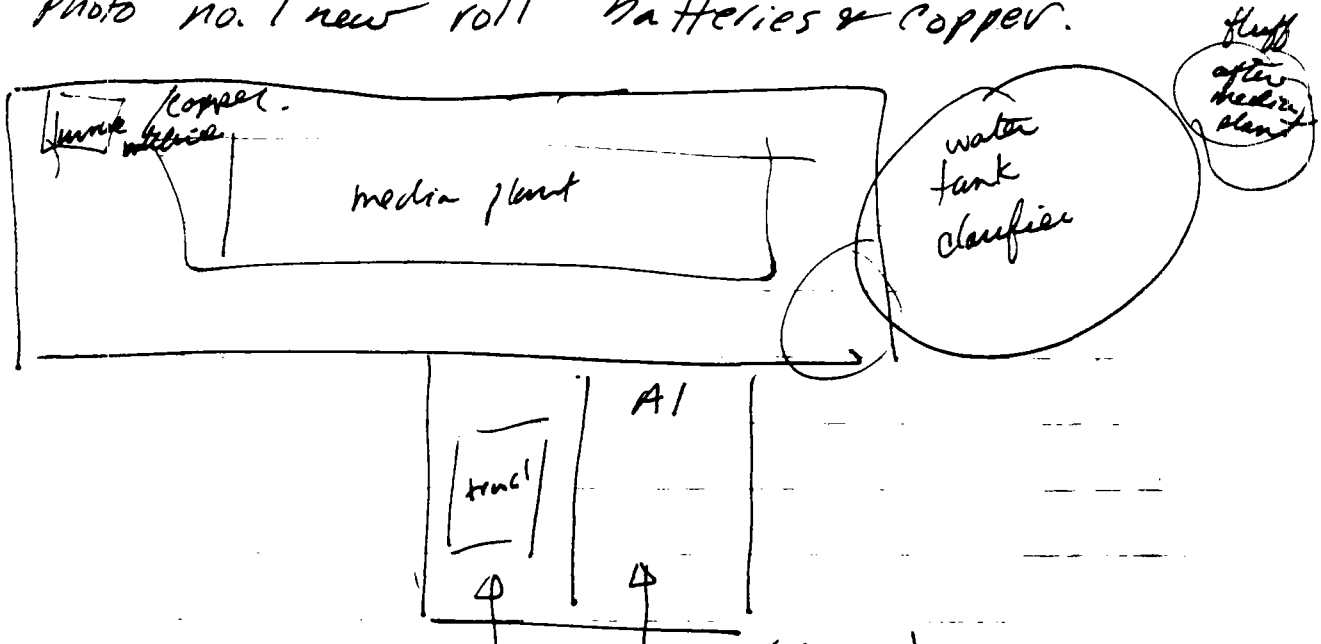


Photo No 2 Clarifier (waste pile in back - fluff.)
solids separated from clarifier to pile next to clarifier
+ then part of fluff waste stream

Photo No. 3 fluff waste pile outside clarifier

Photo No. 4 Cyclone 3 again cuz camera got st
Road marks end of property
nt. City Stockyards - who they rent the land from.
Railcar area - big pile of shredder crap -- being
sold today.
Pho. 5 Rail car shed -- shaker table
Pho. 6 sump + shaker table.
Pho. 7 top of sump oil
Pho. 8 metal box for waste oil from sump.
shaker dust = more metal than dust

At time of VSI no large waste pile of

baler bundles stored on other side of
rail tracks

Fuel storage tanks -- five of them
on ground 11,000 gallon capacities
Photo No. 9+10

Photo 9. photo 10

former rail car tanks
1/4 to 1" thick. -- steel

early 1980s installed - used or sold oil

Area fill pile Photo No. 11 from rail road to
right of orange gate
Dirt pile for cover to left of gate No. 12 Photo

Right side -- 40 acres 20 acre ~~foot~~ amount of 20 acre fill
Left side -- 40 acres trench - filled but not much
~~maybe about~~ 1/4 of it was

Motor oil -- use in equipment
No. 14 -- waste oil 4,000 gallons +
oil drums were stored here before
No. 15 another picture facing office :
Locomotive tank.
Maintanence shop oil dry on floor.

CJS

2 p.m. discussion w/ Bob Gerdes

Clarifier needed just ~~to run~~ run to get off dust glass residue solids sink scum on top. center useful water foamy scum. -- oil + fuzz ~

double arm aerator

pumphouse 3.5' deep 20x20 store water overflow. when shut off fills up ① hold tanks then ② clarifier ③ then pump house floor.

concrete ring → Pump. House → Clarifier → tanks for starting Clarifier + all here since 1975

Chute for oversize pieces

① Oversize radiators al. anything bigger than a log had

② Shaker can only handle 2" or so

Two hold tanks railroad 5,000.

Clarifier 150,000 gallons capacity

~~sump house~~ 3.5' x ~~20~~ 12 wide x 25' long.

Carla J Smith